

## SUPPLEMENTARY MATERIAL

**Table S1.** Sequences of the synthetic DNA oligonucleotides used in this work for generating DNA templates for transcription. The DNA oligonucleotides were all chemically synthesized. Their lengths are given in parentheses after their sequences

Molecule 1 DNA template was PCR generated by amplifying **Molecule1.mat** with **Molecule1.rev** and **Molecule1.fwd**. **Molecule1.mat**: AAGGACTTAGGAAGAACCAAGTTTCCCCGGTTCTTCCATATCCCTATAGT-GAGTCGTATTAGAA (64) **Molecule1.rev**: AAGGACTTAGGAAGAACC (18) **Molecule1.fwd**: TTCTAATACGACTCAC-TATAGGGATATGGAAGAACC (36)

Molecule 2 DNA template was PCR generated by amplifying **Molecule2.mat** with **Molecule1.rev** and **Molecule2.fwd**. **Molecule2.mat**: AAGGACTTAGGAAGAACCAAGTTTCCCCGGAACCTTCCATATCCCTATAGT-GAGTCGTATTAGAA (64) **Molecule2.fwd**: TTCTAATACGACTCACTATAGGGATATGGAAGTTCC (36)

Molecule 3 DNA template was PCR generated by amplifying **Molecule3.mat** with **Molecule1.rev** and **Molecule1.fwd**. **Molecule3.mat**: AAGGACTTAGGAAGAACCAAGTTACCCCGGAACCTTCCATATCCCTATAGT-GAGTCGTATTAGAA (64)

Molecule 4 DNA template was PCR generated by amplifying **Molecule4.mat** with **Molecule4.rev** and **Molecule1.fwd**. **Molecule4.mat**: AAGGAAGTAGCCATGAACCAAGTTTCCCCGGAACATGGCCTTTCCCTATAGT-GAGTCGTATTAGAA (66) **Molecule4.rev**: AAGGAAGTAGCCATGAACC (19) **Molecule4.fwd**: TTCTAATACGACT-CACTATAGGGAAAGGCCATGTTCC (37)

Molecule 5 DNA template was generated by hybridization of **Molecule5.strand+** with **Molecule5.strand-**. **Molecule5.strand+**: TTCTAATACGACTCACTATAGGGGGGAAACTTCTGCAAGGAAACTTGCT (50) **Molecule5.strand-**: AGCAAGTTTCTTGCAGGAAGTTTCCCCCTATAGTGAGTCGTATTAGAA (50)

Molecule 6 DNA template was PCR generated by amplifying **Molecule6.mat** with **Molecule1.rev** and **Molecule6.fwd**. **Molecule6.mat**: AAGGACTTAGGAAGAACCCACCATATCCCGAAGGACTTAGGTGGAACCTTCCAT-ATCCCTATAGTGAGTCGTATTAGAA (79) **Molecule6.fwd**: TTCTAATACGACTCACTATAGGGATATGGAAGGTTCC (37)

Molecule 7 DNA template was PCR generated by amplifying **Molecule7.mat** with **Molecule7.rev** and **Molecule7.fwd**. **Molecule7.mat**: AAGGACTTAGGAAGGAAAACCAAGTTTCCCCGAAAACCTTCCATATCCCTAT-AGTGAGTCGTATTAGAA (70) **Molecule7.rev**: AAGGACTTAGGAAGGAAAACC (21) **Molecule7.fwd**: TTCTAATAC-GACTCACTATAGGGATATGGAAGGTTTCC (39)

Molecule 8 DNA template was PCR generated by amplifying **Molecule8.mat** with **Molecule11.rev** and **Molecule8.fwd**. **Molecule8.mat**: AAGGACTTAGGAAGGATAGGTTCCCTACCAAGTTT-CCCCGTAAGGAACCCATCCTTCCATATCCCTATAGTGAGTCGTATTAGAA (86) **Molecule8.fwd**: GAATTCTAATACGACT-CACTATAGGGATATGGAAGGATGG (40)

Molecule 9 DNA template was PCR generated by amplifying **Molecule9.mat** with **Molecule11.rev** and **Molecule9.fwd**. **Molecule9.mat**: AAGGACTTAGGAAGGAAAGGTTCCCAAC-CAAGTTTCCCCGAAAGGAACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA (86) **Molecule9.fwd**: GAATT-CTAATACGACTCACTATAGGGATATGGAAGGTTGG (38)

Molecule 10 DNA template was PCR generated by amplifying **Molecule10.mat** with **Molecule11.rev** and **Molecule11.fwd**. **Molecule10.mat**: AAGGACTTAGGAAGGAAAGGTTCCCAACCAAGTTT-CCCCGAAAAGGAACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA (88)

Molecule 11 DNA template was PCR generated by amplifying **Molecule11.mat** with **Molecule11.rev** and **Molecule11.fwd**. **Molecule11.mat**: AAGGACTTAGGAAGGAAAGGTTCCCAAACCAAGTTT-CCCCGAAAAGGAACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA (88) **Molecule11.fwd**: TTCTAATACGACT-CACTATAGGGATATGGAAGGTTTGG (38) **Molecule11.rev**: AAGGACTTAGGAAGGAAAG (19)

Molecule 12 DNA template was PCR generated by amplifying **Molecule12.mat** with **Molecule11.rev** and **Molecule11.fwd**. **Molecule12.mat**: AAGGACTTAGGAAGGAAAGGTTCCCAA-ACCAAGTTTCCCCGAAAGGACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA (86)

Molecule 13 DNA template was PCR generated by amplifying **Molecule13.mat** with **Molecule11.rev** and **Molecule11.fwd.Molecule13.mat:AAGGACTTAGGAAGGAAAGGTTTCCCAAACCAAGTTTCCCCGGAAAGGAAACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA** (90)

Molecule 14 DNA template was PCR generated by amplifying **Molecule14.mat** with **Molecule11.rev** and **Molecule11.fwd.Molecule14.mat:AAGGACTTAGGAAGGAAAGGTAGTTGTCTAAGTCCC-AAACCAAGTTTCCCCGGAAAGGACTTAGACAACCTACCCAAACCTTCCATATCCC** (90)

Molecule 15 DNA template was PCR generated by amplifying **Molecule15.mat** with **Molecule15.rev** and **Molecule15.fwd.Molecule15.mat:AAGGACTTAGGAAGGTTAGGTTCCCTTTCCAAG-TTTCCCCGGTTAGGAACCTTTCCCTTCCATATCCCTATAGTGAGTCGTATTAGAA** (88)**Molecule15.rev:AAGGACTTAG-GAAGGTTAG** (19)**Molecule15.fwd:TTCTAATACGACTCACTATAGGGATATGGAAGGAAAGG** (38)

Molecule 16 DNA template was PCR generated by amplifying **Molecule16.mat** with **Molecule11.rev** and **Molecule11.fwd.Molecule16.mat:AAGGACTTAGGAAGGAAAGGTTCCCAAACCAA-GTTTCCTTGAAAGGAACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA** (88)

Molecule 17 DNA template was PCR generated by amplifying **Molecule17.mat** with **Molecule17.rev** and **Molecule11.fwd.Molecule17.mat:AAGGACTTAGGAAGGAAAGGTTCCCAAACCAAGTTT-CCCCGGAAGGAAACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA** (88)**Molecule17.rev:AAGGACTTAG-GAAGGAAGG** (19)

Molecule 18 DNA template was PCR generated by amplifying **Molecule18.mat** with **Molecule18.rev** and **Molecule18.fwd.Molecule18.mat:AAGGACTTAGGAAGGAAAGCTTCACGAAACCAAGTTT-CCCCGGAACGATCCGCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA** (88)**Molecule18.rev:AAGGACTTAG-GAAGGAAGC** (19)**Molecule18.fwd:TTCTAATACGACTCACTATAGGGATATGGAAGGTTTGC** (38)

Molecule 19 DNA template was PCR generated by amplifying **Molecule19.mat** with **Molecule11.rev** and **Molecule11.fwd.Molecule19.mat:AAGGACTTAGGAAGGAAAGGTTCCCAAACCAA-GTTACCTTGAAAGGAAACCCAAACCTTCCATATCCC** (68)

Molecule 20 DNA template was PCR generated by amplifying **Molecule20.mat** with **Molecule20.rev** and **Molecule20.fwd.Molecule20.mat:AAGGAAGTAGCCTAGCAAAGGAGTGCAAA-CCAAGTTTCCCCGGAAACACTCCCAAAGCTAGGCCTTTCC** (70)**Molecule20.rev:AAGGAAGTAGCCTAGCAAAG** (20)**Molecule20.fwd:TTCTAATACGACTCACTATAGGGAAAGGCCTAGCTTTG** (38)

Molecule 21 DNA template was PCR generated by amplifying **Molecule21.mat** with **Molecule11.rev** and **Molecule11.fwd.Molecule21.mat:AAGGACTTAGGAAGGAAAGGTTCCCAAACCAAGTCA-CCCCGGAAGGAAACCCAAACCTTCCATATCCCTATAGTGAGTCGTATTAGAA** (88)

Molecule 22 DNA template was PCR generated by amplifying **Molecule22.mat** with **Molecule22.rev** and **Molecule22.fwd.Molecule22.mat:AAGGACAAGTAAGGAAAGGTTCCCAAACCAAGTTTCCCCGGAAAGGAAACCCAAACCTTACTTATCCCTATAGTGAGTCGTATTAGAA** (87)**Molecule22.rev:TTCTAA-TACGACTCACTATAGGGATAAGTAAGGTTTGG** (38)**Molecule22.fwd:AAGGACAAGTAAGGAAAGG** (19)