

WHAT IS CLAIMED IS:

1. A kit comprising:

a template-independent nucleic acid polymerase;

an attenuator-adaptor polynucleotide comprising a first strand and a second strand, wherein the first strand comprises an attenuator sequence and a sequence W positioned adjacent to the attenuator sequence, wherein the attenuator sequence is from 10 nucleotides to 100 nucleotides in length, and wherein the first strand comprises a 3' blocking group selected from the group consisting of at least one ribonucleotide, at least one deoxynucleotide, a C3 spacer, a phosphate, a dideoxynucleotide, an amino group, and an inverted deoxythymidine; wherein the second strand comprises an adaptor sequence which is complementary to sequence W of the attenuator polynucleotide, wherein the attenuator sequence forms a single-stranded portion of the attenuator-adaptor polynucleotide and wherein the adaptor sequence and sequence W form a double-stranded portion of the attenuator-adaptor polynucleotide;

nucleotides complementary to the attenuator sequence; and

a ligase.

2. The kit of claim 1, wherein the sequence W is positioned 5' adjacent to the attenuator sequence.

3. The kit of claim 1, wherein the template-independent nucleic acid polymerase is terminal deoxynucleotidyl transferase (TdT).

4. The kit of claim 1, wherein the template-independent nucleic acid polymerase is an RNA-specific nucleotidyl transferase selected from the group consisting of poly(A) polymerase and poly(U) polymerase.

5. The kit of claim 1, wherein the attenuator polynucleotide comprises a degradable base.

6. The kit of claim 1, wherein the adaptor polynucleotide further comprises a 5' phosphate.

7. The kit of claim 1, wherein the ligase is a DNA ligase or an RNA ligase.

8. The kit of claim 1 further comprising a primer, a polymerase, and a second adaptor polynucleotide comprising a sequence Y and a sequence V, wherein sequence V is complementary to sequence Y when sequence V is the same length as sequence Y, or wherein sequence V is complementary to a portion of sequence Y when sequence V is less than the length of sequence Y, the second adaptor polynucleotide being a separate molecule from the attenuator polynucleotide.
9. The kit of claim 1, wherein the attenuator polynucleotide comprises an affinity label for immobilization.
10. The kit of claim 1 wherein the attenuator sequence of the attenuator polynucleotide comprises a homopolymeric sequence selected from the group consisting of poly (dA), poly (dT), poly (dC), poly (dG), and poly (dU).
11. The kit of claim 1, wherein the attenuator sequence of the attenuator polynucleotide comprises a homopolymeric sequence selected from the group consisting of poly (rA), poly (U), poly (rC), and poly (rG).
12. The kit of claim 1, wherein the attenuator sequence of the attenuator polynucleotide comprises a heteropolymeric sequence selected from the group consisting of (i) dA and rA bases, (ii) dT, dU and U bases, (iii) dC and rC bases, and (iv) dG and rG bases.
13. The kit of claim 1, wherein the attenuator sequence of the attenuator polynucleotide comprises a dinucleotide sequence comprising a plurality of random sequences comprised of the following dinucleotide combinations: (i) dG and dC; (ii) dA and dT; (iii) dG and dT; (iv) dG and dA; (v) dA and dC; or (vi) dC and dT.
14. The kit of claim 1, wherein the attenuator sequence of the attenuator polynucleotide comprises a dinucleotide sequence comprising a mixture of a ribonucleotide and a deoxyribonucleotide.
15. The kit of claim 1, wherein sequence W is a sequence complementary to any one of SEQ ID NOS: 44-51.

16. The kit of claim 1, wherein the attenuator sequence is from 10 nucleotides to 20 nucleotides in length.
17. The kit of claim 1, wherein the attenuator-adaptor polynucleotide forms a hairpin structure.