

What is claimed is:

1. A reverse transcription method comprising:
 - a. contacting a sample comprising a plurality of RNA molecules with a plurality of oligonucleotide tags to produce a labeled-RNA molecule, wherein:
 - i. the plurality of RNA molecules comprise at least 2 mRNA molecules of different sequences;
 - ii. the plurality of oligonucleotide tags comprises at least 2 oligonucleotide tags of different sequences; and
 - iii. an oligonucleotide tag of the plurality of oligonucleotide tags comprises a unique identifier region.
 - b. conducting a first strand synthesis reaction by contacting the labeled-RNA molecules with a reverse transcriptase enzyme to produce a labeled-cDNA molecule;
 - c. conducting a polymerase chain reaction on the labeled-cDNA molecule of step (b) to produce a double-stranded labeled-cDNA molecule;
 - d. conducting a nested PCR reaction on the double-stranded labeled-cDNA molecule; and
 - e. detecting the double-stranded-labeled-cDNA molecule by hybridizing at least a portion of the double-stranded-labeled-cDNA molecule to a solid support.
2. The method of claim 1, wherein an oligonucleotide tag of the plurality of oligonucleotide tags comprises an oligodT sequence.
3. The method of claim 1, wherein an oligonucleotide tag of the plurality of oligonucleotide tags comprises a universal primer binding site.
4. The method of claim 1, wherein the solid support is an array.
5. The method of claim 1, wherein the solid support is an addressable array.
6. The method of claim 1, wherein the solid support is a bead.
7. The method of claim 1, wherein conducting the polymerase chain reaction comprises annealing a first target specific primer to the labeled-cDNA molecule.
8. The method of claim 1, wherein conducting the polymerase chain reaction further comprises annealing a universal primer to a universal primer binding site of the oligonucleotide tag.

9. The method of claim 1, wherein the polymerase chain reaction comprises absolute PCR, HD-PCR, Next Gen PCR, digital RTA, or any combination thereof.
10. The method of claim 1, wherein conducting the nested PCR reaction comprises denaturing the double-stranded labeled cDNA molecule to produce a denatured single-stranded labeled-cDNA molecule.
11. The method of claim 1, wherein conducting the nested PCR reaction further comprises annealing a second target specific primer to the denatured single-stranded labeled-cDNA molecule.
12. The method of claim 1, wherein conducting the nested PCR reaction further comprises annealing a universal primer to a universal primer binding site of the oligonucleotide tag.
13. The method of claim 1, further comprising conducting a sequencing reaction to determine the sequence of at least a portion of the oligonucleotide tag, at least a portion of the labeled-cDNA molecule, a complement thereof, a reverse complement thereof, or any combination thereof.
14. The method of claim 1, wherein detecting the labeled-cDNA molecules comprises use of an array detector, fluorescent reader, non-fluorescent detector, CR reader, or scanner.
15. The method of claim 14, wherein the array detector is a flatbed scanner.
16. The method of claim 1, wherein detecting the labeled-cDNA molecules comprises detecting the labeled-cDNA molecules hybridized to the solid support.
17. The method of claim 1, further comprising conducting a hybridization chain reaction.
18. The method of claim 1, wherein the oligonucleotide tag comprises one or more secondary structures.
19. The method of claim 18, wherein the one or more secondary structures is a hairpin.
20. The method of claim 1, wherein the oligonucleotide tag is linear.
21. The method of claim 1, wherein producing the double-stranded-labeled-cDNA molecule comprises use of a primer.
22. The method of claim 21, wherein the primer comprises an oligodU sequence.
23. The method of claim 21, wherein the primer comprises a target-specific sequence.
24. The method of claim 21, further comprising treating the sample with a uracil DNA glycosylase (UDG).

25. The method of claim 21, wherein the primer further comprises a unique identifier region.
26. The method of claim 1, wherein conducting the nested PCR reaction comprises the use of a polymerase.
27. The method of claim 26, wherein the polymerase is a Pfu DNA polymerase.
28. The method of claim 26, wherein the polymerase cannot amplify dimerized oligonucleotide tags.
29. The method of claim 26, wherein the polymerase cannot amplify templates containing one or more uracils.
30. The method of claim 1, further comprising counting the number of unique identifier regions associated with the double-stranded-labeled-cDNA molecule.
31. The method of claim 5, further comprising counting the number of discrete locations of the array as detected to determine the number of unique identifier regions.

What is claimed is:

1. A digital reverse transcription method comprising:
 - a. contacting a sample comprising a plurality of RNA molecules with a plurality of oligonucleotide tags to produce a labeled-RNA molecule, wherein:
 - i. the plurality of RNA molecules comprise at least 2 mRNA molecules of different sequences;
 - ii. the plurality of oligonucleotide tags comprises at least 2 oligonucleotide tags of different sequences; and
 - iii. an oligonucleotide tag of the plurality of oligonucleotide tags comprises a unique identifier region.
 - b. conducting a first strand synthesis reaction by contacting the labeled-RNA molecules with a reverse transcriptase enzyme to produce a labeled-cDNA molecule;
 - c. conducting a polymerase chain reaction on the labeled-cDNA molecule of step (b) to produce a double-stranded labeled-cDNA molecule;
 - d. conducting a nested PCR reaction on the double-stranded labeled-cDNA molecule; and
 - e. detecting the double-stranded-labeled-cDNA molecule by hybridizing at least a portion of the double-stranded-labeled-cDNA molecule to a solid support.
2. The method of claim 1, wherein an oligonucleotide tag of the plurality of oligonucleotide tags comprises an oligodT sequence.
3. The method of claim 1, wherein an oligonucleotide tag of the plurality of oligonucleotide tags comprises a universal primer binding site.
4. The method of claim 1, wherein the solid support is an array.
5. The method of claim 1, wherein the solid support is an addressable array.
6. The method of claim 1, wherein the solid support is a bead
7. The method of claim 1, wherein conducting the polymerase chain reaction comprises annealing a first target specific primer to the labeled-cDNA molecule.
8. The method of claim 1, wherein conducting the polymerase chain reaction further comprises annealing a universal primer to a universal primer binding site of the oligonucleotide tag.
9. The method of claim 1, wherein the polymerase chain reaction comprises absolute PCR, HD-PCR, Next Gen PCR, digital RTA, or any combination thereof.

10. The method of claim 1, wherein conducting the nested PCR reaction comprises denaturing the double-stranded labeled cDNA molecule to produce a denatured single-stranded labeled-cDNA molecule.
11. The method of claim 1, wherein conducting the nested PCR reaction further comprises annealing a second target specific primer to the denatured single-stranded labeled-cDNA molecule.
12. The method of claim 1, wherein conducting the nested PCR reaction further comprises annealing a universal primer to a universal primer binding site of the oligonucleotide tag.
13. The method of claim 1, further comprising conducting a sequencing reaction to determine the sequence of at least a portion of the oligonucleotide tag, at least a portion of the labeled-cDNA molecule, a complement thereof, a reverse complement thereof, or any combination thereof.
14. The method of claim 1, wherein detecting the labeled-cDNA molecules comprises use of an array detector, fluorescent reader, non-fluorescent detector, CR reader, or scanner.
15. The method of claim 14, wherein the array detector is a flatbed scanner.
16. The method of claim 1, wherein detecting the labeled-cDNA molecules comprises detecting the labeled-cDNA molecules hybridized to the solid support.
17. The method of claim 1, further comprising conducting a hybridization chain reaction.
18. The method of claim 1, wherein the oligonucleotide tag comprises one or more secondary structures.
19. The method of claim 18, wherein the one or more secondary structures is a hairpin.
20. The method of claim 1, wherein the oligonucleotide tag is linear.
21. The method of claim 1, wherein producing the double-stranded-labeled-cDNA molecule comprises use of a primer.
22. The method of claim 21, wherein the primer comprises an oligodU sequence.
23. The method of claim 21, wherein the primer comprises a target-specific sequence.
24. The method of claim 21, further comprising treating the sample with a uracil DNA glycosylase (UDG).
25. The method of claim 21, wherein the primer further comprises a unique identifier region.
26. The method of claim 1, wherein conducting the nested PCR reaction comprises the use of a polymerase.
27. The method of claim 26, wherein the polymerase is a Pfu DNA polymerase.

28. The method of claim 26, wherein the polymerase cannot amplify dimerized oligonucleotide tags.
29. The method of claim 26, wherein the polymerase cannot amplify templates containing one or more uracils.
30. A clonal amplification method comprising:
- stochastically labeling a plurality of molecules with a plurality of oligonucleotide tags to produce a labeled-molecule, wherein:
 - the plurality of molecules comprise at least 2 molecules of different sequences; and
 - the plurality of oligonucleotide tags comprises at least 2 oligonucleotide tags of different sequences;
 - amplifying the labeled-molecules to produce a labeled-amplicon, wherein amplifying the labeled-molecules comprises HD-PCR and/or nested-PCR; and
 - detecting the labeled-amplicon.
31. A stochastic label-based hybridization chain reaction method, comprising stochastically labeling one or more nucleic acid molecules with a plurality of hairpin oligonucleotide tags, wherein:
- the hairpin oligonucleotide tag comprises an overhang; and
 - the one or more nucleic acid molecules act as initiators for a hybridization chain reaction.
32. A method comprising:
- contacting an original sample comprising a plurality of nucleic acid molecules with a plurality of oligonucleotide tags to produce an original labeled sample comprising a plurality of labeled-nucleic acid molecules;
 - treating the original labeled sample with a uracil DNA glycosylase (UDG), thereby generating a treated labeled sample;
 - amplifying the treated labeled sample by using one or more labeled-nucleic acid molecules from the treated labeled sample as a template parent molecule, thereby producing one or more samples comprising clonally replicated molecules originating from the template parent molecule; and

- d. determining a count of a first molecule from the original sample by determining a number of different clonally replicated molecules comprising the first molecule from a first sample of the one or more samples.
33. The method of claim 32, wherein producing the one or more samples of step (c) comprises producing two or more samples comprising clonally replicated molecules originating from the template parent molecule.
34. The method of claim 33, wherein the two or more samples are produced at two or more times.
35. The method of claim 33, wherein producing the two or more samples comprises amplifying the plurality of labeled-nucleic acid molecules from the treated sample two or more times.
36. The method of claim 33, wherein producing the two or more samples comprises repeatedly amplifying the plurality of labeled-nucleic acid molecules from the treated sample.
37. The method of claim 36, wherein repeatedly amplifying the plurality of labeled-nucleic acid molecules from the treated sample comprises amplifying the plurality of labeled-nucleic acid molecules at least 2, 3, 4, 5, 6, 7, 8, 9, or 10 times.
38. The method of claim 33, wherein producing the two or more samples comprises amplifying the clonally replicated molecules from the first sample.
39. The method of claim 38, wherein producing the two or more samples comprises amplifying the clonally replicated molecules from the first sample two or more times.
40. The method of claim 38, wherein generating the two or more clonal samples comprises repeatedly amplifying the amplicons from a first clonal sample.
41. The method of claim 40, wherein repeatedly amplifying the clonally replicated molecules from the first sample comprises amplifying the clonally replicated molecules at least 2, 3, 4, 5, 6, 7, 8, 9, or 10 times.
42. The method of claim 1, wherein the plurality of nucleic acid molecules comprise a plurality of RNA molecules.
43. The method of claim 42, further comprising conducting a first strand synthesis reaction by contacting the plurality of labeled-nucleic acid molecules with a reverse transcriptase enzyme to produce a labeled-cDNA molecule.

44. The method of claim 43, wherein conducting the first strand synthesis reaction occurs prior to producing the one or more samples comprising the clonally replicated molecules.
45. The method of claim 44, wherein the clonally replicated molecules comprise a copy of the labeled-cDNA molecule.
46. The method of claim 45, further comprising detecting one or more clonally replicated molecules from the one or more samples.
47. The method of claim 46, wherein detecting the one or more clonally replicated molecules comprises hybridizing the one or more clonally replicated molecules to a solid support.
48. The method of claim 32, further comprising detecting one or more clonally replicated molecules from the one or more samples.
49. The method of claim 48, wherein detecting the one or more clonally replicated molecules comprises hybridizing the one or more clonally replicated molecules to a solid support.
50. The method of claim 32, further comprising conducting a nested PCR reaction on the one or more clonally replicated molecules from the one or more samples.
51. The method of claim 32, wherein the original sample is from one or more cells.
52. The method of claim 32, wherein an oligonucleotide tag of the plurality of oligonucleotide tags comprises a unique identifier region.
53. The method of claim 32, wherein an oligonucleotide tag of the plurality of oligonucleotide tags comprises a universal primer binding site.
54. A reverse transcription method comprising:
 - a. hybridizing a plurality of RNA molecules with a plurality of oligonucleotide tags to produce a labelled-RNA molecule, wherein:
 - i. the plurality of RNA molecules comprises at least 2 mRNA molecules of different sequences;
 - ii. the plurality of oligonucleotide tags comprises at least 2 oligonucleotide tags of different sequences; and
 - iii. an oligonucleotide tag of the plurality of oligonucleotide tags comprises an oligodT sequence and a unique identifier region;
 - b. conducting a first strand synthesis reaction by contacting the labelled-RNA molecule with a reverse transcriptase enzyme to produce a labelled-cDNA molecule;

- c. amplifying the labelled-cDNA molecule by conducting a polymerase chain reaction on the labelled-cDNA molecule to produce an amplified double-stranded DNA molecule; and
 - d. detecting the amplified double-stranded DNA molecule by hybridizing at least a portion of the double-stranded amplified DNA molecule to a solid support.
55. The method of claim 54, wherein the oligonucleotide tag of the plurality of oligonucleotide tags further comprises a universal primer binding site.
56. The method of claim 54, wherein the solid support is an array.
57. The method of claim 54, wherein the solid support is an addressable array.
58. The method of claim 54, wherein the solid support is a bead.
59. The method of claim 54, wherein conducting the polymerase chain reaction comprises annealing a first target specific primer to the labelled-cDNA molecule.
60. The method of claim 59, wherein conducting the polymerase chain reaction further comprises annealing a universal primer to a universal primer binding site of the oligonucleotide tag.