

28. The method of any of the preceding claims, wherein detecting the conjugated oligonucleotide amplicon and the target nucleic acid amplicon in step d) comprises sequencing the amplicons.
29. The method of any of the preceding claims, further comprising quantifying expression of the target non-nucleic acid molecule, the target nucleic acid molecule, or both, in the sample.
30. The method of any of the preceding claims, wherein the target non-nucleic acid molecule is a target protein.
31. The method of any of the preceding claims, wherein the target nucleic acid molecule is a target RNA molecule.
32. The method of Claim 31, wherein the target RNA molecule is a target mRNA molecule.
33. The method of any of the preceding claims, wherein the sample comprises a plurality of cells.
34. The method of Claim 33, wherein the method further comprises isolating single cells from the sample comprising a plurality of cells prior to step b).
35. The method of any of the preceding claims, wherein the sample comprises a single cell.
36. A binding agent that is covalently conjugated to an oligonucleotide, wherein the oligonucleotide comprises a binding agent identification tag and a blocking group that prevents extension of the primer by a polymerase.
37. The binding agent of Claim 36, wherein the binding agent is an antibody.
38. The binding agent of Claim 37, wherein the antibody is a monoclonal antibody
39. The binding agent of Claim 36, 37 or 38, wherein the conjugated oligonucleotide is a DNA molecule.
40. The binding agent of Claim 39, wherein the DNA molecule is single stranded.

41. The binding agent of any one of Claims 36-40, wherein the conjugated oligonucleotide further comprises a poly(A) sequence.
42. The binding agent of any one of Claims 36-41, wherein the blocking group is a ddNTP or an inverted dTTP.
43. The binding agent of any one of Claims 36-42, wherein the blocking group is at the 3' end of the conjugated oligonucleotide.
44. The binding agent of any one of Claims 36-43, further comprising a linker between the binding agent and the oligonucleotide.
45. A kit for detecting a target non-nucleic acid molecule and a target nucleic acid molecule in a sample comprising:
 - a) a binding agent covalently conjugated to an oligonucleotide, wherein the oligonucleotide comprises a binding agent identification tag; and
 - b) one or more DNA amplification primers.
46. The kit of Claim 45, wherein the binding agent is an antibody.
47. The kit of Claim 46, wherein the antibody is a monoclonal antibody.
48. The kit of Claim 45, 46 or 47, wherein the conjugated oligonucleotide is a DNA molecule.
49. The kit of Claim 48, wherein the DNA molecule is single stranded.
50. The kit of any one of Claims 45-49, wherein the conjugated oligonucleotide comprises a blocking group that prevents extension of the primer by a polymerase.
51. The kit of Claim 50, wherein the blocking group is a ddNTP or an inverted dTTP.
52. The kit of Claim 49 or 50, wherein the blocking group is at the 3' end of the conjugated oligonucleotide.
53. The kit of any one of Claims 45-52, further comprising reagents for performing a reverse transcription reaction.

54. The kit of Claim 53, wherein the reagents include a reverse transcriptase (RT) enzyme, an oligo dT primer, a reverse transcription buffer, deoxynucleotides (dNTPs), or a combination thereof.
55. The kit of any one of Claims 45-54, further comprising reagents for performing a nucleic acid amplification reaction.
56. The kit of Claim 55, wherein the reagents include a DNA polymerase, an amplification buffer, deoxynucleotides (dNTPs), or a combination thereof.
57. The kit of any one of Claims 45-56, further comprising one or more sequencing primers.
58. A method of detecting a target protein and a target nucleic acid molecule in a sample, comprising the steps of:
 - a) contacting a sample comprising a target protein and a target nucleic acid molecule with a binding agent under conditions that permit binding between the binding agent and the target protein in the sample, wherein the binding agent is covalently conjugated to an oligonucleotide that comprises a binding agent identification tag;
 - b) reverse transcribing the conjugated oligonucleotide and the target nucleic acid molecule in the sample simultaneously, thereby producing a conjugated oligonucleotide reverse transcription product and a target nucleic acid molecule reverse transcription product;
 - c) amplifying the conjugated oligonucleotide reverse transcription product and the target nucleic acid molecule reverse transcription product simultaneously, thereby producing a first conjugated oligonucleotide amplicon and a first target nucleic acid molecule amplicon;
 - d) separating the first conjugated oligonucleotide amplicon and the first target nucleic acid molecule amplicon;
 - e) amplifying the separated conjugated oligonucleotide amplicon and target nucleic acid molecule amplicon in separate reactions, thereby producing a second conjugated oligonucleotide amplicon and a second target nucleic acid molecule amplicon; and
 - f) detecting:

- 1) the second conjugated oligonucleotide amplicon, thereby detecting the target protein in the sample; and
- 2) the second target nucleic acid molecule amplicon, thereby detecting the target nucleic molecule in the sample.