

**80.** The method of claim **0**, wherein the step of contacting comprises dispensing the magnetic particles in a fluid medium.

**81.** The method of claim **0**, wherein the magnetic particles comprise at least two populations of magnetic particles, wherein the populations are distinguishable.

**82.** The method of claim **0**, further comprising the steps of:

removing a majority of the magnetic particles from the device; and

reusing the device in a subsequent analytical process.

**83.** An array of magnetic particles formed according to the method of claim **0**.

**84.** The array of claim **0**, wherein each of a plurality of the magnetic particles comprises a probe.

**85.** The array of claim **0**, wherein the magnetic particles comprise at least two populations of magnetic particles, wherein the populations are distinguishable.

**86.** A method of analyzing a sample comprising:

contacting the sample with magnetic particles, wherein each of a plurality of the magnetic particles comprises a probe;

forming an array of the magnetic particles; and

determining whether a probe interacts with a target in the sample.

**87.** The method of claim **0**, wherein the determining step comprises performing an assay selected from the group consisting of: a genotyping assay, a hybridization assay, an SBE assay, an OLA assay, an ASPE assay, an allelic PCR assay, an exonuclease assay, and an invasive cleavage assay.

**88.** The method of claim **87**, wherein the plurality of magnetic particles comprises at least two populations of magnetic particles, with each population comprising a unique probe selected from a set of universal hybridization tags.

**89.** The method of claim **88**, wherein the sample contains targets, and wherein the targets in the sample contain sequences complementary to the universal hybridization tags, and wherein generation of the targets involves reformatting any arbitrary nucleic acid sequence to be detected to a unique sequence chosen from the set of universal tags.

**90.** The method of claim **0**, wherein the determining step comprises performing an enzyme-linked immunosorbent (ELISA) assay.

**91.** The method of claim **0**, wherein the contacting step occurs before the forming step.

**92.** The method of claim **0**, wherein the forming step occurs before the contacting step.

**93.** The method of claim **0**, wherein the plurality of magnetic particles comprises at least two populations of magnetic particles, wherein each of the populations of magnetic particles comprises a different probe.

**94.** The method of claim **0**, wherein the plurality of magnetic particles comprises at least two populations of magnetic particles, wherein the populations are distinguishable.

**95.** The method of claim **94**, wherein each population of beads is labeled with a detectable moiety, wherein the detectable moieties differ in amount or in chemical structure between different populations of magnetic particles.

**96.** The method of claim **95**, wherein the detectable moiety is a fluorescent or luminescent molecule or a hybridization tag.

**97.** The method of claim **0**, wherein the step of determining comprises:

determining whether a probe binds to a target.

**98.** The method of claim **0**, wherein a target interacts with a probe, and wherein the determining step comprises:

determining the identity of the probe.

**99.** The method of claim **0**, wherein a target interacts with a probe, and wherein the determining step comprises:

determining the identity of the target.

**100.** The method of any of claims **0**, **97**, **98**, or **99**, wherein the probe and the target comprise nucleic acid molecules.

**101.** The method of any of claims **0**, **97**, **98**, or **99**, wherein the determining step comprises detection using a confocal scanner or a charge coupled device.

**102.** A method of analyzing a sample comprising:

contacting the sample with magnetic particles, wherein each of a plurality of the magnetic particles comprises a probe;

forming an array of the magnetic particles; and

performing an assay selected from the group consisting of: a genotyping assay, a hybridization assay, an SBE assay, an OLA assay, an ASPE assay, an allelic PCR assay, an exonuclease assay, and an invasive cleavage assay, and an enzyme-linked immunosorbent (ELISA) assay.

**103.** The method of claim **102**, wherein the contacting step occurs before the forming step.

**104.** The method of claim **102**, wherein the forming step occurs before the contacting step.

**105.** The method of claim **102**, wherein the magnetic particles comprise at least two populations of magnetic particles, wherein the populations are distinguishable.

**106.** The method of claim **102**, wherein the magnetic particles comprise at least two populations of magnetic particles, wherein each of the populations comprises a probe.

**107.** The method of claim **102**, wherein the plurality of magnetic particles comprises at least two populations of magnetic particles, with each population comprising a unique probe selected from a set of universal hybridization tags.

**108.** The method of claim **102**, wherein the sample contains targets, and wherein the targets in the sample contain sequences complementary to the universal hybridization tags, and wherein generation of the targets involves reformatting any arbitrary nucleic acid sequence to be detected to a unique sequence chosen from the set of universal tags.

**109.** A method of analyzing a sample comprising:

contacting the sample with magnetic particles, wherein each of a plurality of the magnetic particles comprises a probe;

forming an array of the magnetic particles; and

performing an enzyme-linked immunosorbent (ELISA) assay.