

What is claimed is:

[Claim 1]. A biotin-streptavidin cleavage composition, comprising:
from about 10% by volume to about 50% by volume of a formamide
5 reagent; and
a balance of a salt buffer.

[Claim 2]. The biotin-streptavidin cleavage composition as defined in claim 1, wherein the formamide reagent is 100% formamide.

[Claim 3]. The biotin-streptavidin cleavage composition as defined in
10 claim 1 or 2, wherein the salt buffer includes about 0.75 M sodium chloride and about 75 mM sodium citrate in water.

[Claim 4]. The biotin-streptavidin cleavage composition as defined in claim 3, wherein the salt buffer further includes from about 0.25 wt% to about 1.5 wt% of a biocompatible surfactant.

15 [Claim 5]. The biotin-streptavidin cleavage composition as defined in one of claims 1 through 4, wherein the composition includes about 50% of the formamide reagent and about 50% of the salt buffer.

[Claim 6]. The biotin-streptavidin cleavage composition as defined in one of claims 1 through 4, wherein the composition includes about 40% of the
20 formamide reagent and about 60% of the salt buffer.

[Claim 7]. A biotin-streptavidin cleavage composition, consisting of:
from about 10% by volume to about 50% by volume of a formamide reagent including formamide and an optional buffer; and
a balance of a salt buffer including sodium chloride, sodium citrate, and
25 a biocompatible surfactant.

[Claim 8]. A method, comprising:

introducing library fragments to a flow cell, wherein the library fragments are attached to streptavidin coated solid supports;

introducing a biotin-streptavidin cleavage composition to the flow cell,
5 the biotin-streptavidin cleavage composition including:

from about 10% by volume to about 50% by volume of a formamide reagent; and

a balance of a salt buffer; and

allowing the biotin-streptavidin cleavage composition to incubate in the
10 flow cell at a temperature ranging from about 60°C to about 70°C, thereby causing at least some of the library fragments to release from the solid supports and to seed to amplification primers on a surface of the flow cell.

[Claim 9]. The method as defined in claim 8, wherein the biotin-streptavidin cleavage composition is allowed to incubate in the flow cell for a
15 time ranging from about 2 minutes to about 5 minutes.

[Claim 10]. The method as defined in claim 8 or 9, wherein:

at least some of the streptavidin coated solid supports become bound to biotin capture sites on a surface of the flow cell; and

the allowing of the biotin-streptavidin cleavage composition to incubate
20 in the flow cell also causes at least some of the bound streptavidin coated solid supports to release from the biotin capture sites.

[Claim 11]. The method as defined in claim 10, further comprising rinsing the biotin-streptavidin cleavage composition from the flow cell after incubation, thereby removing the streptavidin coated solid supports and any
25 unseeded library fragments.

[Claim 12]. The method as defined in one of claims 8 through 11, further comprising preparing the biotin-streptavidin cleavage composition by mixing the formamide reagent and the salt buffer.

[Claim 13]. The method as defined in claim 12, wherein the formamide reagent includes 100% of formamide.

[Claim 14]. The method as defined in claim 12 or 13, wherein the salt buffer includes about 0.75 M sodium chloride and about 75 mM sodium citrate
5 in water.

[Claim 15]. The method as defined in one of claims 12 through 14, wherein the salt buffer further includes from about 0.25 wt% to about 1.5 wt% of a biocompatible surfactant.

[Claim 16]. A kit, comprising:
10 a streptavidin coated solid support;
an adapter sequence having biotin attached at one end, wherein the biotin is to be attached to the streptavidin coated solid support;
a sample fluid including a genomic sequence that is to be fragmented and attached to the adapter sequence; and
15 a biotin-streptavidin cleavage composition, including:
from about 10% by volume to about 50% by volume of a formamide reagent; and
a balance of a salt buffer.

[Claim 17]. The kit as defined in claim 16, wherein the formamide
20 reagent is 100% formamide.

[Claim 18]. The kit as defined in claim 16 or 17, wherein the salt buffer includes about 0.75 M sodium chloride and about 75 mM sodium citrate in water.

[Claim 19]. The kit as defined in one of claims 16 through 18, wherein
25 the salt buffer further includes from about 0.25 wt% to about 1.5 wt% of a biocompatible surfactant.