IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

GE HEALTHCARE UK LIMITED, Plaintiff and Counterdefendant v. BECKMAN COULTER, INC. AND BECKMAN COULTER GENOMICS, INC., Defendants and Counterclaimants	)	**REDACTED** **PUBLIC VERSION** C.A. No. 09-974-RK **JURY TRIAL DEMANDED**

BECKMAN COULTER, INC. AND BECKMAN COULTER GENOMICS, INC.'S RESPONSE TO GE HEALTHCARE UK LIMITED'S OPENING CLAIM CONSTRUCTION BRIEF

Of Counsel:

James G. Gilliland, Jr.
TOWNSEND AND TOWNSEND AND CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111
(415) 576-0200

Susan M. Spaeth
Anne M. Rogaski
Robert J. Artuz
TOWNSEND AND TOWNSEND AND CREW LLP
379 Lytton Avenue
Palo Alto, California 94301
(650) 326-2400

Michael C. Schiffer
BECKMAN COULTER, INC.
250 S. Kraemer Boulevard
Brea, California 92821
(714) 993-5321

ASHBY & GEDDES
Steven J. Balick (I.D. #2114)
Tiffany Geyer Lydon (I.D. #3950)
Lauren E. Maguire (I.D. #4261)
Caroline Hong (I.D. #5189)
500 Delaware Avenue, 8th Floor
P.O. Box 1150
Wilmington, DE 19899
(302) 654-1888
sbalick@ashby-geddes.com
tlydon@ashby-geddes.com
lmaguire@ashby-geddes.com
chong@ashby-geddes.com

Attorneys for Defendants/Counterclaimants Beckman Coulter, Inc. and Beckman Coulter Genomics, Inc.

Dated: August 27, 2010

TABLE OF AUTHORITIES

Page

I. INTRODUCTION 1

II. THE PATENTEE'S CHARACTERIZATION OF "BEADS WHICH DO NOT SPECIFICALLY BIND THE NUCLEIC ACID" IN BOTH THE INTRINSIC AND EXTRINSIC EVIDENCE CONFIRMS BECKMAN'S CONSTRUCTION 2

A. Beckman's Proposed Construction Does Not Read "Specifically" Out Of The Claims 2

B. Beckman's Proposed Construction Finds Support In Both The Intrinsic Record And The Most Relevant Extrinsic Evidence 3

C. GEHC's Heavy Reliance On Extrinsic Evidence Highlights The Flaws In Its Proposed Construction 5

D. GEHC's Proposed "Structure" Construction Is Wholly Ambiguous 6

E. The Hawkins Patent Relied Upon By GEHC Supports Beckman's – Not GEHC's – Proposed Construction 8

III. "BECOMES AGGREGATED WITH AND ENTRAPS THE BEADS" REQUIRES CONSTRUCTION OF THE TERM AS A WHOLE 10

A. Beckman's Proposed Construction Finds Support In The Intrinsic Record 10

B. The Passivity Of The Claimed Mechanism Is Implicit In the Intrinsic Evidence And Explicit In The Most Relevant Extrinsic Evidence 12

IV. THE CLAIM TERM "BECOMES NON-SPECIFICALLY ASSOCIATED WITH THE BEADS" IS INDEFINITE 13

A. During Prosecution Of The '231 Patent, The Examiner Found "Non-Specifically Associated With" Not Definite Enough 14

B. "Non-Specifically Associated With" Is Insolubly Ambiguous 14

V. GEHC'S ARGUMENTS REGARDING "SUSPENDED" AND "RE-SUSPEND THE BEADS" ARE NONSENSICAL IN VIEW OF THE INTRINSIC EVIDENCE AND MOST RELEVANT EXTRINSIC EVIDENCE 17

A. The "Suspension" Steps Of The Claimed Invention Require A "Thorough" Dispersion Of The Beads 17

B. The "Suspension" Steps Of The Claimed Invention Must Occur In The Absence Of A Magnetic Field 19

VI. CONCLUSION 20

TABLE OF AUTHORITIES

Page

Cases

Abbott Labs. v. Sandoz, Inc.,
566 F.3d 1282 (Fed. Cir. 2009).....17

CCS Fitness, Inc. v. Brunswick Corp.,
288 F.3d 1359 (Fed. Cir. 2002).....3

CIF Licensing, LLC v. Agere Sys.,
565 F. Supp. 2d 533 (D. Del. 2008).....11

Cohesive Techs., Inc. v. Waters Corp.,
543 F.3d 1351 (Fed. Cir. 2008).....12

Datamize, LLC v. Plumtree Software, Inc.,
417 F.3d 1342 (Fed. Cir. 2005).....13

Evans Med. v. American Cyanamid Co.,
11 F. Supp. 2d 338 (S.D.N.Y. 1998).....12

Finisar Corp. v. DirecTV Group, Inc.,
523 F.3d 1323 (Fed. Cir. 2008).....6

Halliburton Energy Servs., Inc. v. M-I LLC,
514 F.3d 1244 (Fed. Cir. 2008).....13

Honeywell Int'l, Inc. v. Int'l Trade Comm'n,
341 F.3d 1332 (Fed. Cir. 2003).....13

Kara Technology Inc. v. Stamps.com Inc.,
582 F.3d 1341 (Fed. Cir. 2009).....18

Markman v. Westview Instruments, Inc.,
52 F.3d 967 (Fed. Cir. 1995) (en banc).....11, 18

Phillips v. AWH Corp.,
415 F.3d 1303 (Fed. Cir. 2005)..... passim

Source Search Techs., LLC v. LendingTree, LLC,
588 F.3d 1063 (Fed. Cir. 2009).....4

Vergason Tech. v. Masco Corp.,
146 F. Supp. 2d 465 (D. Del. 2001).....3, 7

Vitronics Corp. v. Conceptronic, Inc.,
90 F.3d 1576 (Fed. Cir. 1996).....2, 4

TABLE OF AUTHORITIES

Page

STATUTES

35 U.S.C. § 112 ¶ 2 13

I. INTRODUCTION

In exchange for disclosing all the details of an invention, a patentee obtains a limited monopoly to practice its invention. Critical to the patent process is the notice function. Patents must put the public on notice of what the claimed invention is and the meaning and scope of the claim terms. This allows the public to ascertain the clear boundaries of the invention and avoid infringing the patent's claims. For this reason, the Federal Circuit has instructed that intrinsic evidence is more significant to the construction of claim terms than extrinsic evidence. Publicly available intrinsic evidence notifies the public of what the patentee intends to capture in its claims and, on the other hand, what the patentee identifies as outside its claims. Because of the significance of this notice function, extrinsic evidence cannot be used to change the meaning of claim terms sufficiently defined by the intrinsic evidence.

Here, Beckman relies primarily on intrinsic evidence to support its proposed constructions, turning to extrinsic evidence only to confirm that the constructions informed by the intrinsic evidence are correct. When Beckman relies on extrinsic evidence, it focuses on the patentee's own statements about the processes claimed in the Reeve patents. Though technically "extrinsic" – because the statements were made outside the context of prosecution of the patents – the patentee's statements ***about the claimed processes*** are much more pertinent to the meaning of claim terms in the Reeve patents than other extrinsic evidence unrelated to the patents. Because Beckman's constructions are supported by evidence the Federal Circuit confirmed is most significant, Beckman's proposed constructions should be adopted.

GEHC, on the other hand, leads its claim construction arguments with extrinsic evidence – the declaration of an expert it retained for this litigation, patents describing the inventions of scientists other than Dr. Reeve and dictionary definitions. GEHC briefly mentions intrinsic evidence, seemingly as an afterthought, but does not principally rely on it. Turning the hierarchy

of claim construction evidence on its head, GEHC's improper constructions should be rejected for what they are: unsupported constructions created with an eye toward having to prove infringement. GEHC is improperly attempting to recapture through its litigation claim interpretation coverage that it relinquished during prosecution. Simply put, GEHC's proposed interpretation of "beads which do not specifically bind the nucleic acid" would capture within its scope the use of particular types of beads which it excluded from its claims during the prosecution. The position now being taken by GEHC is also contrary to the interpretation of the patent by the inventor, Dr. Reeve. The Federal Circuit has expressly cautioned against such revisionism. GEHC's litigation-driven constructions, therefore, should be rejected.

II. THE PATENTEE'S CHARACTERIZATION OF "BEADS WHICH DO NOT SPECIFICALLY BIND THE NUCLEIC ACID" IN BOTH THE INTRINSIC AND EXTRINSIC EVIDENCE CONFIRMS BECKMAN'S CONSTRUCTION

A. Beckman's Proposed Construction Does Not Read "Specifically" Out Of The Claims

The intrinsic evidence in this case reveals that in order to obtain allowance of the '231 patent, the patentee represented that the language "beads which do not specifically bind" means beads that are "inert, non-binding." Beckman believes this phrase is properly interpreted to mean particles that are "inert or do not have an affinity for" nucleic acids. Contrary to GEHC's contention, this construction does not result in "specifically" having no real effect. First, inert beads with no affinity for nucleic acids assuredly do not specifically bind nucleic acids. Second, any variance in the meaning of the claim from one of its known meanings is a result created by the patentee, through its arguments to obtain the patent during prosecution. This claim term cannot be construed in a manner that is ***inconsistent*** with the intrinsic evidence. Indeed, this would destroy the notice function of the patent process. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (Intrinsic evidence "constitute[s] the public record of

the patentee's claim, a record on which the public is entitled to rely. In other words, competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention."). Finally, the phrase "specifically bind" can include binding either a particular nucleic acid or a specific class of biological polymers, *i.e.*, all nucleic acids. Thus, under Beckman's construction, "inert or no affinity for nucleic acids," the beads could have an affinity for, or ability to bind, other polymers, just not nucleic acids. This is consistent with GEHC's position taken during the prosecution and Dr. Reeve's interpretation during his deposition.

B. Beckman's Proposed Construction Finds Support In Both The Intrinsic Record And The Most Relevant Extrinsic Evidence

The Reeve patents' intrinsic record defined "beads which do not specifically bind" in a particular way, as is permitted under patent law. *See CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) ("A claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history."); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (same). As the specification demonstrates, the beads of the Reeve patents are either inert, completely encapsulated in inert polymer or pre-treated to make the beads inert. (Declaration of Robert J. Artuz in Support of Beckman's Opening Claim Construction Brief ("Artuz Opening Decl."), D.I. 74, Ex. 1 at col. 2:51-61 and 2:65-3:5.) In each case, they have no affinity for or ability to bind nucleic acids. Any ambiguity about this interpretation was resolved during prosecution of the Reeve patents, when the patentee unequivocally stated that the beads of the Reeve patents were "inert, non-binding" beads. (*Id.*, Ex. 4 at p. 8.) This made clear that the beads were designed to not bind nucleic acids (as opposed to other things in the solution) at all. *See Vergason Tech. v. Masco Corp.*, 146 F. Supp. 2d 465, 474 (D. Del. 2001) ("[T]he

prosecution history 'is often of critical significance in determining the meaning of th[e] claims.'") (quoting *Vitronics*, 90 F.3d at 1582). Thus, the patentee defined "beads which do not specifically bind" as "***inert, nonbinding***" beads.

There is no question that "inert [or having no] affinity for nucleic acids" is the only construction that gives effect to the specification as a whole. Nothing in the specification suggests the beads have any affinity for, or the ability to bind to, nucleic acids. (Declaration of Dr. Nicholas V. Hud in Support of Beckman's Response to GE Healthcare UK Limited's Opening Claim Construction Brief ("Hud Decl."), ¶ 24.) Indeed, nowhere in the specification does the patentee teach having something on the surface of the beads which would bind; it only teaches against it. (*Id.*, ¶¶ 22-25.) GEHC's attempt in this litigation to revoke the statements the patentee made to obtain the Reeve patents, and obtain broader coverage than the Patent Office allowed it, conflicts with Federal Circuit law and must be rejected. *Source Search Techs., LLC v. LendingTree, LLC*, 588 F.3d 1063, 1075 (Fed. Cir. 2009) ("Claims may not be construed one way in order to obtain their allowance [in prosecution] and in a different way against accused infringers."); *Vitronics*, 90 F.3d at 1582-83.

GEHC complains that the word "inert" (again, ***chosen by the patentee*** during prosecution) is misleading or confusing because beads cannot be entirely "inert" (non-reactive). Beckman has not argued that the patentee meant "entirely inert." Rather, the intrinsic evidence makes clear, as described above, that "inert" connotes not having anything on the bead's surface designed to attract or bind nucleic acids. This is supported by the extrinsic evidence (the patentee's own statements about the covered FMP beads) that explains the beads "do not interact or bind." (D.I. 75 at 8-9.)

GEHC's suggestion that Beckman is arguing that the claimed beads have "no interaction

at all" with the nucleic acid precipitate is absurd. (*Id.* at 9.) The claimed beads are designed to "not interact or bind" with nucleic acids, because the Reeve process does not rely on binding interactions between the beads and the precipitating nucleic acids. Instead, the Reeve invention relies upon the precipitating nucleic acids to entrap the beads between the individual nucleic acid polymers which are binding to each other, not the beads. Nevertheless, simply as a matter of proximity, the precipitate will contact the beads when the beads and entrapping precipitate are pulled towards the magnet. (Hud Decl., ¶¶ 26-27.) As described by the inventor, Dr. Reeve:

REDACTED

(Declaration of Robert J. Artuz in Support of Beckman's Response to GE Healthcare UK Ltd.'s Opening Claim Construction Brief ("Artuz Resp. Decl."), Ex. 17 at 12:22-13:7, emphasis added.) The "inert" nature of the beads simply describes that the surface of the beads have no affinity for – and do not bind – nucleic acids. It does not require complete isolation from the environment of which they are a part, nor does it suggest "no interaction" with the precipitate that entraps the beads, an impossibility in the claimed process. This term must be construed in the context of the claimed process, not in isolation, as GEHC urges.

C. GEHC's Heavy Reliance On Extrinsic Evidence Highlights The Flaws In Its Proposed Construction

The Court should be immediately wary of a claim construction argument that ignores the Federal Circuit's admonitions and ***leads*** with or unduly relies on litigation-driven extrinsic evidence as opposed to the intrinsic record. GEHC's opening claim construction brief does exactly that. GEHC ***begins*** its argument by citing to its litigation expert (the least significant

evidence for claim construction) and two non-Reeve patents. As the Federal Circuit cautioned:

> [E]xtrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence. The effect of that bias can be exacerbated if the expert is not one of skill in the relevant art or if [as here] the expert's opinion is offered in a form that is not subject to cross-examination.

Phillips, 415 F.3d at 1318. Unquestionably, intrinsic evidence is far more significant than extrinsic evidence in construing claim terms, and it should be consulted first in any claim construction analysis. *Id.*; *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1328 (Fed. Cir. 2008) ("When construing claims, the claims and the rest of the patent, along with the patent's prosecution history . . . are the primary resources; while helpful, extrinsic sources like dictionaries and expert testimony cannot overcome more persuasive intrinsic evidence."). Given the Federal Circuit's clear confirmation of the hierarchy of claim construction evidence (beginning with intrinsic evidence), the fact that GEHC started its analysis so far afield from the intrinsic evidence reveals the weaknesses inherent in GEHC's construction.[1]

D. GEHC's Proposed "Structure" Construction Is Wholly Ambiguous

Applying the *Phillips* analysis to GEHC's proposed construction reveals the defects in GEHC's position. For example, GEHC argues that the construction of "beads which do not specifically bind the nucleic acid" should include the phrase, "that is governed by the particular structure of that particular nucleic acid." (D.I. 75 at 5.) Yet, ***nowhere*** in the specification is nucleic acid structure even mentioned, let alone used to explain "which do not specifically bind" in the context of nucleic acid binding. Similarly, nothing in the prosecution history relied upon

---

[1] Indeed, when GEHC finally turns to the intrinsic evidence, it relies on discussions of other terms such as "non-specific binding" and "non-specifically associated," not "specifically bind." (D.I. 75 at 8.) GEHC also conflates "binding," "association" and "attachment," confusing its analysis even more.

by GEHC explains the claimed invention with reference to a nucleic acid's "structure." There simply is no support in the intrinsic evidence for GEHC's construction. Even worse, nothing in the intrinsic evidence assists those of ordinary skill in the art in understanding what GEHC's use of the term "structure" means in the context of the Reeve patents. (Hud Decl., ¶¶ 6-21.)

GEHC's sole source of support for its ambiguous construction is extrinsic evidence. And GEHC resorts to the least reliable form of extrinsic evidence – expert testimony. *See Vergason*, 146 F. Supp. 2d at 474 ("When extrinsic evidence is used in claim interpretation, sources available prior to the litigation are preferred over testimony or evidence created with the specter of looming litigation."). Even Dr. Kool's declaration, standing alone, is inconsistent regarding what "structure" means. Tellingly, Dr. Kool never provides a clear, unequivocal definition of "structure." In certain paragraphs, Dr. Kool seems to equate "structure" and "sequence;" in other paragraphs, he suggests sequence is a subset of structure, but does not explain what the precise differences are, or how such differences affect the Reeve process. (D.I. 76, ¶¶ 34, 36, 40.) In yet another instance, Dr. Kool offers an example of non-specific binding that is governed by the structure of a particular class of nucleic acids (single-stranded DNA) further confusing the interpretation of "specifically" and "structure." (D.I. 76, ¶¶ 41-42.)

Further, Dr. Kool's opinions conflict with the prosecution history. During prosecution, the patentee relinquished coverage of at least beads involving antibody-antigen, covalent and adsorption mechanisms. (D.I. 73 at 7-8.) GEHC cannot now assert that beads using any of these mechanisms fall within its patents. Yet, through its proposed construction, GEHC attempts to narrow the exclusion of beads to only those using binding mechanisms dependent upon the specific structure of particular nucleic acids (*e.g.*, antibody-antigen binding), rather than nucleic acids in general (*e.g.*, covalent or adsorption). Nothing in the specification or the prosecution

history supports this differentiation. Another problem with GEHC's proposed definition is that it does not clearly distinguish beads capable of providing one binding mechanism from another. Both adsorption and covalent attachment can involve ***non-specific*** or specific binding, depending on the conditions. (Hud Decl., ¶¶ 18-21.) Thus, certain beads will not fit neatly into the category "specific binding." Attempting to carve a dividing line between specific and non-specific simply creates ambiguity given the patentee's arguments during prosecution. Rather, the commonality of these interactions is that they all involve affinity, or binding. The only way to reconcile the exclusion of these interactions from the scope of the claims is through the patentee's characterization of the beads, as "inert, non-binding," or, more generally, beads that are "inert or do not have an affinity for nucleic acids."

E. The Hawkins Patent Relied Upon By GEHC Supports Beckman's – Not GEHC's – Proposed Construction

Attempting to distinguish specific binding from non-specific binding, GEHC also argues that a definition of "non-specific DNA binding" in a patent issued to Dr. Trevor Hawkins informs the meaning of "beads which do not specifically bind nucleic acids" in the Reeve patents. (D.I. 75 at 6, 8 and 9; Artuz Resp. Decl., Ex. 18.) In so doing, GEHC's argument simply highlights the fact that inventors can define terms differently. *See Phillips*, 415 F.3d at 1316. That Hawkins defined his term in a particular way cannot define a different term in the Reeve patents. Invoking the Hawkins definition is particularly inappropriate here, because the Patent Office issued the Hawkins patent ***over the Reeve technology***, finding the Hawkins technology (on which Beckman's accused SPRI® technology is based) to be ***different from the Reeve technology***.

Like GEHC here, the Hawkins Examiner initially – and, incorrectly – thought binding was disclosed by both Reeve and Hawkins. On that basis, the Patent Office initially rejected the

Hawkins claims as obvious over the Reeve technology. (Artuz Resp. Decl., Ex. 19 at pp. 3-4.) In response, Hawkins explained that the beads of his invention were critical, unlike those in the Reeve patents, because they were specially designed to bind nucleic acids. (*Id.*) Hawkins clarified that the "non-specific binding" in his invention was based on the affinity that carboxyl groups on the surface of magnetic beads had for nucleic acids, and he distinguished that interaction from that of the claimed "entrapment" mechanism of the Reeve patents. (*Id.*, Ex. 20 at p. 2.) Hawkins further noted that Amersham's commercially available beads and the polymer encapsulated beads disclosed by Reeve ***did not bind*** nucleic acids, while the Hawkins carboxylated beads, in contrast, ***did bind*** nucleic acids. (*Id.* at pp. 2-3.) Hawkins further clarified that "[t]he association between the magnetic microparticles and the polynucleotide or other biopolymers [in the Reeve method] ***does not involve any type of affinity*** between the magnetic microparticles and the biopolymer; rather, the association results from the aggregation of the precipitated biopolymers and resulting entrapment of the magnetic microparticles." (*Id.* at p. 5, emphasis added.) The Examiner then accepted Hawkins's arguments, withdrew the rejection over Reeve and issued the Hawkins patent. (*Id.*, Ex. 21 at p. 2.)

Accordingly, the Patent Office understood Hawkins' carboxylated beads to be different from those claimed by Reeve and to capture nucleic acids using a different mechanism. Because the Patent Office found "non-specific binding" in Hawkins' patent to be different from Reeve's mechanism, the Hawkins patent does not support GEHC's position. This evidence instead supports Beckman's proposed construction because the Patent Office confirmed the distinction between the Hawkins and Reeve beads – that the Hawkins method used beads that bound to nucleic acids while the Reeve method did not "involve any type of affinity." (*Id.*, Ex. 20 at p. 5).

The only construction of "beads which do not specifically bind" which is consistent with

the intrinsic evidence is Beckman's proposed construction.

III. "BECOMES AGGREGATED WITH AND ENTRAPS THE BEADS" REQUIRES CONSTRUCTION OF THE TERM AS A WHOLE

GEHC's arguments regarding the proposed meaning of "becomes aggregated with and entraps the beads" highlight how unhelpful claim constructions can be when the intrinsic evidence and common sense are ignored. Parsing words and substituting dictionary definitions ("clusters," "traps") for individual words ("aggregated," "entraps") does not help construe this term. The term as a whole is a single concept and must be construed that way.

A. Beckman's Proposed Construction Finds Support In The Intrinsic Record

GEHC takes issue with Beckman's construction requiring that the nucleic acid precipitate "surround the beads such that the beads are passively enmeshed in the precipitate." GEHC first complains that Beckman's use of the term "surround" indicates that the precipitate must "completely encircl[e] [the beads] on all sides." (D.I. 75 at 12.) But Beckman has not proposed such a narrow construction. Beckman is not arguing that the precipitate must completely encapsulate every bead; not even the ordinary meaning of "surround" suggests such an extreme result.[2] Beckman's construction merely requires that the precipitate formed by the clustering of nucleic acids to each other sandwiches and captures the beads "***such that*** the beads are passively enmeshed in the precipitate." In other words, the precipitate must surround the beads enough so as to enmesh the magnetic beads in the resulting precipitate, thus ensuring that the entrapping precipitate is drawn down with the magnetic beads by the magnet. If it did not, the Reeve process would not work.

---

[2] The dictionary definition on which GEHC relies in footnote 7 of its brief confirms Beckman's construction is correct. Webster's defines "surround" as "to be situated or found ***around*** ... to form a ring ***around***: extend ***around*** ... ." (D.I. 75 at 12 n.7, emphases added.)

GEHC also argues that Figure 1a shows "the beads are entrapped without being surrounded." (D.I. 75 at 12.) The fact that that the figure does not show the beads surrounded in the precipitate is irrelevant for at least two reasons: (1) the contact shown could not entrap inert beads, so the figure does not accurately depict the interaction; and (2) because Figure 1a is a simplistic, two-dimensional rendition and is not to scale, it expectedly does not fully illustrate three-dimensional entrapment of beads by aggregated nucleic acid precipitate. The specification makes clear that entrapment is something more than is shown in Figure 1a. Because the claimed methods use inert, non-binding beads, the only way nucleic acids could be recovered by this method is if the forming precipitate surrounds and sandwiches the beads between and among the nucleic acids, enmeshing them such that the precipitate can be pulled down with the beads.

GEHC's further contention that "enmeshed" simply conveys "traps" is incorrect. Once again, GEHC takes individual terms out of context. "Becomes aggregated with and entraps" is a mechanism occurring as the nucleic acids precipitate out of solution. In this mechanism, the precipitated nucleic acids surround the beads and, as they aggregate, enmesh the beads together. "Traps" does not convey this mechanism – only the result. While Beckman appreciates the need to simplify difficult technical concepts for the jury, it cannot be done at the expense of accurately describing the concepts, which is what GEHC's construction would accomplish. *See CIF Licensing, LLC v. Agere Sys.*, 565 F. Supp. 2d 533, 544 (D. Del. 2008) ("[T]he Court's task is to construe claim terms for one of ordinary skill in the art, rather than for the general public."), citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 986 (Fed. Cir. 1995) (en banc).

B. The Passivity Of The Claimed Mechanism Is Implicit In the Intrinsic Evidence And Explicit In The Most Relevant Extrinsic Evidence

GEHC also takes issue with the use of the term "passively" in Beckman's construction. Again, this is the patentee's own characterization. The passiveness of the "aggregated with and entraps" mechanism is apparent from the specification generally, including the fact that any interaction between the nucleic acid precipitate and "inert, non-binding beads" can only be passive, as a result of proximity, not affinity or binding. That the patentee did not expressly use the word "passive" does not change the disclosure which connotes passivity. Were there any doubt, the most relevant extrinsic evidence (that which discusses the patentee's FMP technology) confirms this. *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1370 n.3 (Fed. Cir. 2008); *Evans Med. v. American Cyanamid Co.*, 11 F. Supp. 2d 338, 350-351 (S.D.N.Y. 1998) (the "most persuasive extrinsic evidence" on which a court should rely are statements from the patentee itself).

Amersham's commercial literature – describing the Reeve technology – states, "[d]uring aggregation FMP particles are passively entrapped." (Artuz Resp. Decl., Ex. 22 at GEHCBC00000230.) Dr. Reeve, in deposition, repeatedly confirmed that his mechanism involved "passive" entrapment:

REDACTED

Regardless of whether the Reeve patents expressly state that the entrapment is "passive," that is what a skill artisan would understand from the full teaching of the patents. (Hud Decl., ¶¶ 26-

27.)

Contrary to GEHC's contention, passive entrapment does not preclude any and all interactions between the beads and the nucleic acid precipitate. (*Id.*, ¶ 26.) Obviously, when the beads are brought down by the magnet, there must be contact between the precipitate and the beads. What "passive" entrapment conveys is that such contact is not driven by binding or affinity between the beads and the precipitate, but by the beads being sandwiched or caught between the precipitated nucleic acids. (*See, e.g.*, Artuz Resp. Decl., Ex. 17 at 12:22-13:7.)

While GEHC's proposed construction simply substitutes one ambiguous word for another, Beckman's construction assigns meaning to the entire claim term. "Clusters together and surrounds the beads such that the beads are passively enmeshed in the precipitate" is a well-supported construction that fully resolves the ambiguities in the original claim language.

IV. THE CLAIM TERM "BECOMES NON-SPECIFICALLY ASSOCIATED WITH THE BEADS" IS INDEFINITE[3]

The "definiteness" requirement of 35 U.S.C. § 112 ¶ 2 ensures that claims delineate the scope of the invention using language that adequately notifies the public of the patentee's right to exclude. *Honeywell Int'l, Inc. v. Int'l Trade Comm'n*, 341 F.3d 1332, 1338 (Fed. Cir. 2003). The phrase "becomes non-specifically associated with the beads" is indefinite because the specification reveals it is impossible for one of ordinary skill in the art to adequately comprehend what is meant by the phrase, "becomes non-specifically associated with.... ." *See Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008) ("Even if a claim term's definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope."). This term must be

---

[3] The parties have agreed that Beckman's arguments regarding indefiniteness in the claim construction phase will be limited to the briefing in its claim construction briefs and will not

found indefinite because, after a proper claim construction analysis under *Phillips* (set forth in Beckman's opening brief), it remains insolubly ambiguous and not amenable to construction. *See Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005).

A. During Prosecution Of The '231 Patent, The Examiner Found "Non-Specifically Associated With" Not Definite Enough

The original assignee of the Reeve patents, Amersham, tried repeatedly to get claims issued with the "non-specifically associated with" language, yet the '231 Examiner refused, even after two interviews and an amendment. (Artuz Resp. Decl., Exs. 23 - 28.) Finally, Amersham met with the Examiner a third time to discuss the pending rejections. In that interview, the Examiner "recommended further changes to claims to improve definiteness." (*Id.*, Ex. 29 at 1, emphasis added.) The following day, the Applicant amended claim 22 – which eventually issued as claim 1 of the '231 patent – changing "non-specifically associated with" to "aggregated with and entraps." (*Id.*, Ex. 30 at 1-2.) This change of language finally persuaded the Examiner that the pending claims were definite and the '231 patent issued. (*Id.*, Ex. 31.) While Amersham asserted that it did not believe it gave up its original position with regard to the phrase "non-specifically associated with," it is clear that nothing argued by Amersham persuaded this Examiner to the contrary.[4]

B. "Non-Specifically Associated With" Is Insolubly Ambiguous

Just as the '231 Examiner found "non-specifically associated with" to not be definite, Dr. Reeve (the inventor) could not define the boundaries of claim 1 of the '946 patent. REDACTED

REDACTED

---

incorporate by reference briefing in its Motion for Summary Judgment of Invalidity (D.I. 58).

[4] The '946 Examiner also rejected claims with the "non-specifically associated with" language as the ***same invention*** as claims with "aggregated with and entraps." GEHC never substantively rebutted this rejection, but rather submitted a document purportedly resolving the issue through the term of the patent. (Artuz Resp. Decl., Ex. 32 at 2-3; Ex. 33 at 1-2.)

REDACTED

Dr. Reeve also was unable to define "non-specifically associated with," in claim 1 of the '946 patent, without reference to the '231 patent claim terms, such as "aggregated" and "entrap." For example, when asked about the meaning of "non-specifically associated with," Dr. Reeve answered with language from the '231 patent claims:

REDACTED

(*Id.*, Ex. 17 at 186:19-22, emphasis added.) He further testified:

> Q. What is the association then that you are referring to as 'nonspecifically associated?'
>
> A. They are in the same place in space, by which I mean that the nucleic acid aggregated and the magnetic particles are close to each other, by which I mean the nucleic acid is aggregated around the magnetic particle. If it weren't, when you applied the magnetic field you would lose the nucleic acid. ... This is driven by the process of nucleic acid precipitation and nucleic acid nucleic acid (sic) aggregation. I don't think I can make it clearer than that.

(*Id.*, Ex. 17 at 189:18-190:11, emphases added.) In short, Dr. Reeve was unable to define the scope of "non-specifically associated with" in claim 1 of the '946 patent without reference to aggregation around and entrapment of the beads (limitations of claim 1 of the '231 patent). Further, when asked how one would test whether non-specific association occurred, Dr. Reeve testified that one would compare yields of nucleic acid (how much was recovered in comparison to the original amount) at the end of the process, yet he could not identify any yield that would show non-specific association had occurred, and his patents do not identify any yields. His only guidance as to how to determine from yields if one had non-specific association was: REDACTED REDACTED (*Id.*, Ex. 17 at 190:12-193:7.) The boundaries of the '946 patent claims cannot be ascertained when the answer depends on some factor that even the inventor could not identify

and that is not clarified by the patents. Dr. Reeve's answer confirms "non-specifically associated with" is too ambiguous to define the scope of the claim.

Tellingly, GEHC points to nothing in the intrinsic evidence that distinguishes "becomes non-specifically associated with" from "aggregated with and entraps." Neither GEHC nor Dr. Kool make any effort to explain what interaction in the context of the claimed processes would be non-specific association and not entrapment. They also do not explain what conditions would result in one but not the other. GEHC simply seems to argue that the disputed phrase is not indefinite because the '231 patent examiner only rejected the claims as not definite enough (rather than using the term "indefinite"). Semantics aside, GEHC cannot change the fact that the '231 patent Examiner refused to issue claims with this term, finding the claims not definite enough until this claim term was removed.[5] GEHC also cannot escape the inventor's inability to distinguish claim 1 of the '231 patent and claim 1 of the '946 patent when the only substantive difference was the substitution of "non-specifically associated with" for "aggregated with and entraps."[6] (Artuz Resp. Decl., Ex. 17 at 184:5-18 and 186:19-22.) Finally, GEHC's own actions

---

[5] GEHC surprisingly relies on the Patent Office's "Reasons For Allowance" (which uses the phrase "do not specifically associate with ...") as support for this term being definite. The Reasons For Allowance, however, were written on September 19, 1995. The Examiner later summarized an interview that occurred on September 26, 1995 – a week ***after*** the Reasons For Allowance were drafted – in which the Examiner noted he "recommended further changes to claims to improve definiteness." (D.I. 77-5, p. 5 of 7.) Following the interview, the patentee amended the claims to remove the "non-specifically associated with" language. The Court should reject GEHC's argument that the mere attaching of the Reasons for Allowance to the Notice of Allowance somehow resurrects the Examiner's use of the phrase "do not specifically associate with" when an intervening amendment addressed the definiteness problem.

[6] GEHC again seeks refuge in extrinsic evidence, where it finds no assistance. As with the "beads which do not specifically bind" term, GEHC relies heavily on the same statement in the Hawkins patent discussed above for the meaning of "non-specific DNA binding." As discussed in Section II.E. above, however, the Patent Office distinguished the "non-specific binding" mechanism of Hawkins from the entrapment mechanism of the Reeve patents. The Hawkins patent cannot save "becomes non-specifically associated with" from indefiniteness because it

confirm the indefiniteness of this term, as it changed its proposed construction just prior to filing its opening brief. (Artuz Opening Decl., Ex. 16.) If there was a single, precise, clear definition of this term, GEHC would have put that forth from the start and not wavered. But GEHC is still trying to find a definition that avoids the inevitable conclusion: this term is indefinite.

V. GEHC'S ARGUMENTS REGARDING "SUSPENDED" AND "RE-SUSPEND THE BEADS" ARE NONSENSICAL IN VIEW OF THE INTRINSIC EVIDENCE AND MOST RELEVANT EXTRINSIC EVIDENCE

A. The "Suspension" Steps Of The Claimed Invention Require A "Thorough" Dispersion Of The Beads

Focused solely on the text of the Reeve patents, GEHC argues that there is no support in the specification for requiring the beads to be dispersed "thoroughly" or "throughout the solution." (D.I. 75 at 18.) It is basic patent law, however, that the specification includes the figures and, here, Figure 1a is most instructive of the meaning of "suspended" and "re-suspend."

Plainly, Figure 1a shows a "suspension," where all of the beads are thoroughly dispersed in the liquid; none have settled to the bottom. It also shows that the beads are dispersed "throughout the solution," not just in the bottom portion of the solution or off to one side. Accordingly, the disputed "suspended" and "re-suspended" terms should not be construed to encompass anything less than a ***thorough*** dispersion of the beads, because the specification provides no disclosure of what a "suspension" would be if not the thorough dispersion of Figure 1a. *See Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1288 (Fed. Cir. 2009) (The "court may reach a narrower construction, limited to the embodiment(s) disclosed in the specification, when the [intrinsic evidence] clearly indicate that the invention encompasses no more than that confined structure or method.").

---

defines a different mechanism and even uses different words (binding v. associated with).

Dr. Reeve, the inventor, even confirmed Beckman's construction in deposition. Dr. Reeve testified that his claimed process involves REDACTED

REDACTED (Artuz Resp. Decl., Ex. 17 at 29:13-19, emphasis added.)

He further volunteered, REDACTED

(*Id.* at 29:13-19, emphasis added.) The intrinsic evidence, confirmed by the inventor's deposition testimony, cannot be changed or outweighed by GEHC's litigation argument and conclusory expert testimony to the contrary. *Kara Technology Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) ("A court should discount any expert testimony that is clearly at odds with the claim construction mandated by the . . . written record of the patent.") (quotations and citation omitted).

Rather than offer a proposed construction that clarifies the meaning of "suspended" and "re-suspension," GEHC resorts to a construction that is just as ambiguous as the original claim language. Here, the crux of the parties' dispute is not whether the beads are "dispersed;" the parties agree the beads must be dispersed. The dispute is ***to what extent*** the beads must be dispersed (or spread out) such that they are "suspended" in the solution. Dr. Reeve clarified the degree: REDACTED

(Artuz Resp. Decl., Ex. 17 at 27:6-28:8, emphasis added.) While Beckman's proposed construction directly addresses this issue, GEHC and its expert, Dr. Kool, avoid it. *See Markman*, 52 F.3d at 976 (The purpose of claim construction is to "determin[e] the ***meaning and scope*** of the patent claims asserted to be infringed.") (emphasis added). Undoubtedly, GEHC has avoided identifying the degree of dispersion required for "suspension" because it knows the only degree fully supported by the intrinsic and extrinsic evidence is a ***thorough*** dispersion, as shown, for example, in Figure

1a.

B. The "Suspension" Steps Of The Claimed Invention Must Occur In The Absence Of A Magnetic Field

GEHC also argues that the beads can be "suspended" or "re-suspended" in the presence of a magnetic field. While that may be theoretically true for short bursts of time (without considering the intrinsic evidence), it is not supported by the Reeve patents. The portions of the specification that precede and describe the patents' embodiments repeatedly demonstrate that the step at which the nucleic acids are re-dissolved and the beads are re-suspended takes place in the absence of the magnetic field. (Artuz Opening Decl. (D.I. 74), Ex. 1 at cols. 4:34-36, 5:39-41, 6:23-24, 8:28-30.) The entire point of the magnetic field is to draw the beads and the enmeshed precipitate to one side of the well so that the supernatant (*i.e.*, the left over liquid) can be removed. (*Id.* at col. 5) In other words, the purpose of the magnetic field is to effect the opposite of a suspension. If application of the magnetic field continued, the beads could not be dispersed without vigorously agitating the solution, which would reduce the speed and efficiency of the process. (Hud Decl., ¶ 32.) At a minimum, attempting to re-suspend in the presence of the magnet would not be as fast or efficient as in the absence of the magnet, contrary to the touted advantage of the Reeve process over the prior art. (Artuz Opening Decl., Ex. 1 at col. 4:45-52 (that one of the "clear advantages" of the procedure was that it was "[f]aster (the modified procedure takes only 1-2 minutes ... .").) Nowhere does the patent instruct or even suggest agitating the solution in the presence of the magnetic field, which would be a slower process. Indeed, the asserted claims themselves (*e.g.*, claim 1 of the '231 patent below) confirm the magnetic field is not applied during suspension and re-suspension:

> A method of making a product solution containing a nucleic acid . . .
> comprising the steps of:
>
> precipitating the nucleic acid out of the starting solution in the presence of the

> ***suspended*** magnetically attractable beads . . .
>
> ***applying a magnetic field*** to draw down the precipitate of the nucleic acid and the entrapped beads and to form a first supernatant liquid, . . .
>
> adding a liquid to the precipitate and the entrapped beads to re-dissolve the nucleic acid and ***re-suspend the beads***,
>
> ***applying a magnetic field*** to draw down the beads and to form a second supernatant liquid, and . . . .

(Artuz Opening Decl. (D.I. 74), Ex. 1 at col. 12:20-39, emphasis added.) The order of the above steps plainly demonstrates that the magnetic field is applied only after the suspension and re-suspension of the beads. *See Phillips*, 415 F.3d at 1314 ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms") (citation omitted). While GEHC argues that the claim does not teach turning off the magnet, the claim language would make no sense if the magnet is never turned off – why would the claim instruct "applying a magnetic field" if the magnetic field was already applied?

All of the Reeve patents' figures also support Beckman's proposed construction. Figure 1a, for example, unequivocally shows that the step of "apply[ing] [the] magnetic field" occurs before the beads are drawn down (in the first well of the second row of wells), and again after re-suspension (after the third well of the second row of wells). If the magnetic field remained on after the beads were drawn down, there would be no need to include a second "apply magnetic field" step. This makes perfect sense, because if the magnetic field remained on during the suspension and re-suspension steps, it would hold down the beads and counteract the purpose of those steps – namely, to thoroughly disperse and re-disperse the beads throughout the solution.

VI. CONCLUSION

Beckman respectfully requests that the Court adopt its proposed constructions.

ASHBY & GEDDES

/s/ *Tiffany Geyer Lydon*

Steven J. Balick (I.D. #2114)
Tiffany Geyer Lydon (I.D. #3950)
Lauren E. Maguire (I.D. #4261)
Caroline Hong (I.D. #5189)
500 Delaware Avenue, 8th Floor
P.O. Box 1150
Wilmington, DE 19899
(302) 654-1888
sbalick@ashby-geddes.com
tlydon@ashby-geddes.com
lmaguire@ashby-geddes.com
chong@ashby-geddes.com

Attorneys for Defendants/Counterclaimants Beckman Coulter, Inc. and Beckman Coulter Genomics, Inc.

Of Counsel:

James G. Gilliland, Jr.
TOWNSEND AND TOWNSEND AND CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111
(415) 576-0200

Susan M. Spaeth
Anne M. Rogaski
Robert J. Artuz
TOWNSEND AND TOWNSEND AND CREW LLP
379 Lytton Avenue
Palo Alto, California 94301
(650) 326-2400

Michael C. Schiffer
BECKMAN COULTER, INC.
250 S. Kraemer Boulevard
Brea, California 92821
(714) 993-5321

Dated: August 27, 2010