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Biocept, Inc.

Company Description: Biocept is an early-stage cancer diagnostics company with proprietary platforms for circulating tumor cells (CTCs) and circulating tumor DNA (ctDNA) with one test currently marketed and five tests intended to launch in the next 18 months. The company also offers clinical research services to support biopharmaceutical drug development and clinical trial support at their CLIA certified and CAP accredited lab. Biocept is based in San Diego, California.

Healthcare- Molecular Diagnostics May 1, 2014

Biocept enables "liquid biopsy" in cancer diagnostics, initiate with STRONG BUY

(BIOC - $4.74) STRONG BUY

Key Points

- **Biocept offers a unique platform for capturing and analyzing circulating tumor cells (CTCs) and circulating tumor DNA (ctDNA) from a standard blood sample, a "liquid biopsy".**
- **Tissue biopsies are invasive, expensive, and can be risky or not even possible for very ill patients. CTCs and ctDNA allow for the diagnosis and monitoring through simple blood draws, which should be able to improve care and lower costs. For instance, a lung cancer biopsy may cost north of $10,000 to conduct before including expenses associated with complications, which can occur in ~15% of lung biopsies (and can cost tens of thousands of dollars). We project once Biocept's OncoCEE-LU CTC test reaches the market later this year, it will be priced in the $1,500-$2,500 range, far cheaper than a lung biopsy.**
- **Our due diligence suggests the Biocept approach is likely to be as good or better than other approaches focused on isolating CTCs and ctDNA. Additionally, they are one of the only firms pursuing both the CTC and ctDNA approaches, making them agnostic as to which gains traction.**
- **The company has launched OncoCEE-BR, a test for the HER2 expression in breast cancer patients. They have a deep pipeline targeting lung, gastric, colorectal, melanoma, and prostate cancers, all of which should be validated and launched before the end of next year. Collectively these tests have the potential to impact nearly 8,000,000 people living with these types of cancers in the US. This would imply a $4.8 billion theoretical opportunity at a $600 ASP, below what Biocept is currently being reimbursed at.**
- **Studies have shown that Biocept is able to identify roughly twice as many patients with the HER2 mutation than tissue biopsies. This marker opens the door to Herceptin therapy, potentially allowing this effective therapeutic to be used in more breast cancer cases.**
- **BIOC's present valuation is highly attractive, with an enterprise value of just $3 million, or only 0.2x our 2015 EV/sales estimate.**
- **Initiating with STRONG BUY rating and $14.00 (3.5x 2016 EV/sales, discounted back 25%) price target.**

Financial Summary

Rev(mil)	2013A	2014E	2015E
Mar	$0.0A	$0.0E	$1.5E
June	$0.0A	$0.1E	$2.3E
Sept	$0.0A	$0.4E	$3.6E
Dec	$0.0A	$0.8E	$5.1E
FY	$0.1A	$1.2E	$12.5E
P/Sales	200x	16.7x	1.6x

EPS	2013A	2014E	2015E
Mar	($10.67)A	($0.91)E	($0.55)E
June	($10.83)A	($0.67)E	($0.52)E
Sept	($15.72)A	($0.74)E	($0.44)E
Dec	($13.57)A	($0.78)E	($0.29)E
FY	($50.80)A	($3.05)E	($1.79)E
P/E	NM	NM	NM

Price:	$4.74
52-Week Range:	$10.02-$4.16
Target:	$14.00
Rating:	STRONG BUY
Shares Outstanding:	4.4 mil
Mkt. Capitalization:	$21 mil
Ave. Volume:	20,000
Instit. Ownership:	N/A
BV / Share:	$2.73
Debt / Tot. Cap.:	12%
Est. LT EPS Growth:	40%

Please see important disclosures on pages 20 to 22.

INVESTMENT THESIS

Biocept has developed an intriguing platform for the capture of circulating tumor cells (CTCs) and circulating tumor DNA (ctDNA) from whole blood, in essence a "liquid biopsy". Their solution enables analysis of CTCs and ctDNA through traditional methods of cancer diagnostic analysis such as fluorescence in situ hybridization (FISH) as well as newer methods, such as next-generation sequencing (NGS). The "liquid biopsy" aspect presents a huge opportunity to improve care, in our view, as many cancer patients are too unwell to undergo tissue biopsies to monitor their cancers, or the cancer tissues may be inaccessible; in any case, tissue biopsies can be quite expensive. By enabling cancer diagnosis and monitoring through blood draws, we believe Biocept's technology can improve care and reduce costs. That said, the company only has a breast cancer test commercialized to date, and while their pipeline is strong and projected to come to market in the near future, competition exists in the CTC market. We think Biocept's platform has a strong chance of succeeding, given the smart design choices made in the development of their platform. The company, however, has not generated significant revenue to date, and would, as a result, be considered a more speculative investment. Based upon our outlook for the company, we have assigned BIOC share a $14.00 price target (3.5x 2016 EV/sales, discounted back 25%), and we have assigned the company a STRONG BUY rating.

Opportunities

"Liquid biopsies" present a huge opportunity to improve care. One of the chief issues in cancer diagnostics is obtaining a valid sample. This concern is particularly acute in many solid tumor cancers, where an invasive procedure is required to gain access to a sample of potentially cancerous tissue. Additionally, a pathologist cannot exhaustively evaluate an entire tissue sample – even if there are cancerous cells in a sample sent to the lab, there is no guarantee they will be found with traditional methods. Biocept's CEE (cell enrichment and extraction) technology is able to capture rare cells, such as circulating tumor cells (CTCs) that may represent just 1 in 100,000,000,000 (100 billion) blood cells, without the need to obtain a tissue sample. Cancer is well known to be heterogeneous, with molecular properties differing and tumor cells undergoing mutations, making it difficult to know definitively whether a tissue biopsy represents the true state of the tumor. Surgical biopsies are costly and may not be the proper course of action for patients in poor condition, the location of the tumor, and/or recurrence monitoring. Having the ability to characterize a patient's cancer with merely a blood sample thorugh a platform such as Biocept's has the ability to change cancer care and treatment outcomes, in our view.

Unique technology. While other firms, including Johnson & Johnson (JNJ – not rated), have technology used to enumerate (count) CTCs, Biocept has clearly designed its platform to eliminate the key challenges in rare cell capture. Multiple firms have attempted to develop microfluidics platforms for the capture of CTCs, and have relied upon regular arrangements of posts, channel-immobilized antibodies, and limited antibodies available for binding – each of which is likely to increase the chances that the rare cell one is attempting to capture slips past the binding posts. Numerous methods are being attempted, but we view Biocept's platform as well conveived and likely to be more sensitive and specific than competing technologies. Please see the "CEE Technology Overview" and "Competition" sections that follow for further discussion.

May allow use of effective cancer drugs in more cases. The HER2 (Human Epidermal Growth Factor Receptor 2) mutation offers the ability to offer Herceptin, but studies have shown certain traditional methods of attempting to determine whether the sample is HER2 positive can miss over 50% of HER2-positive patients who could receive Herceptin therapy. We believe this makes Biocept's platform attractive to potential biopharma partners in both drug development as well as a companion diagnostic.

Valuation attractive. At present, BIOC shares trade at a mere $3 million enterprise value, essentially assigning a zero valuation to their technology, patents, and College of American Pathologists (CAP) accredited high-complexity CLIA laboratory. While we believe the company will need to raise additional capital in the next twelve months, the possibility exists the company may be able to secure non-dilutive financing through a partnership or licensing agreement.

Large pipeline targeting massive market. While Biocept has only launched one test, they are in the process of validating CTC and ctDNA tests for five other cancers – prostate, lung, colorectal, and melanoma. Collectively, once launched, these tests will target over 900,000 cancer diagnoses annually in the US as well as nearly 8,000,000 people living with cancer. If we assume $600/test pricing (below Biocept's realized level in 2012 and 2013), this would imply a theoretical addressable market of $4.8 billion. We believe Biocept will execute on bringing its pipeline to market by the end of next year.

Potential to generate recurring revenue monitoring cancer patients. The larger pure-play genomics firms' proprietary tests, notably Genomic Health (GHDX – not rated) and Myriad Genetics (MYGN – not rated), are generally ones that would

be run once in a patient's life, either to determine the hereditary cancer risk posed to a patient or to provide a likelihood of recurrence. Biocept's test pipeline is broad and could be utilized for patient monitoring, given its "liquid biopsy" nature. This would give the company a measure of recurring, high-margin revenue, similar to a SaaS (software-as-a-service) model which investors have shown the willingness to place a premium multiple upon. We believe investors may assign BIOC a premium multiple once it demonstrates the power of this business model.

Potential acquisition candidate. We believe BIOC is an attractive acquisition candidate for the aforementioned reasons as well as a number of acquisitions occurring over the past several years in the personalized medicine space giving the impression of a "land grab" occurring within the space. We would expect Biocept to generate interest from potential suitors as they execute on their pipeline and adoption of their tests occurs.

Risks

Additional funding likely needed. Biocept raised net proceeds of $16.7 million in their recent IPO. The company will likely need to raise additional capital to execute on its plan and fulfill other obligations. We believe the company is most likely to raise additional equity funding, although we cannot rule out non-dilutive funding in the form of a partnership or license agreement. They may also be able to raise capital via a line of credit or debt financing, although we view this as unlikely. If the company chooses to raise funds via an equity offering, which we would consider the most likely option, the raise has the potential to put pressure on the share price.

Biocept has not achieved significant revenue to date. In both 2012 and 2013, Biocept generated just $0.1 million in revenue. That said, they have not previously had a field sales force. At present, the company has begun building out its sales force, but time-to-productivity for salespeople in the oncology area is usually at least six months.

Requires a behavior change amongst practitioners. The oncology market has long sent off tissue samples to diagnostic laboratories, and behaviors in the medical community can be highly reluctant to change. As such, adoption can be slower than expected for new technologies in medicine; in fact, studies have shown it takes nearly 15 years for *half* of practitioners to adopt a new way of treatment after a major landmark study. In many cancers, it is still in the early innings of the adoption of genomic characterization, although recent FDA approvals of molecularly targeted oncology therapies is likely to increase adoption of molecular diagnostics overall. Despite this, oncologists would need to change their tissue biopsy habits to move to a liquid biopsy, something that may not occur quickly or easily.

Pipeline does not come to fruition. While Biocept believes they have made solid progress towards validation of their pipeline, unforeseen developments can always occur. Based upon other approaches available and validated for capturing CTCs and our belief Biocept's approach has advantages over competing approaches, we believe the company's pipeline will be validated, but there can be no guarantee.

Competitive CTC capture approaches in development or launched, uncertainty on which will capture mind-share. A number of other approaches are being attempted, but it is unclear which ones will ultimately be the winners. Certainly, we have seen cases where better diagnostic technology failed to gain traction in situations where inferior competitors reached market sooner, or similar technological approaches developed by firms with deeper pockets and larger sales forces won out. Please see the "Competition" section that follows for further discussion of competing approaches.

Please review the company's SEC filing for a comprehensive discussion of potential risks.

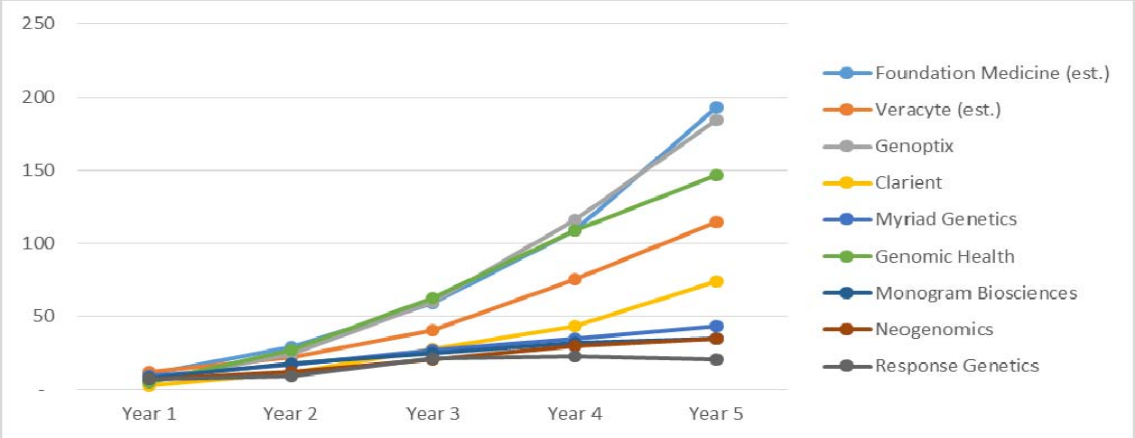
Thoughts on Valuation

Valuations of molecular diagnostics companies early on in their revenue ramp are somewhat challenging. There are examples of companies in the space at present and historically being assigned huge multiples based upon the potential of their tests. For some, such as Myriad Genetics (MYGN – not rated) and Genomic Health (GHDX – not rated), these multiples turned out to be completely justified, as both firms were able to grow into their initially large EV/sales multiples. The table below details the handful of companies we see as reasonable historical comps to BIOC at the point in their respective histories where they exceeded $40 million in annual sales. One can readily see how volatile the valuations can be, notably Myriad Genetics' $1.9 billion EV at its peak and negative EV at trough, although this did take place in 2000.

	Sales			EV/sales		EV	
	T - 1	T	Y/Y Growth	High	Low	High	Low
Clarient	$ 28	$ 43	55%	4.5	2.5	$ 195	$ 108
Genoptix	$ 24	$ 59	147%	7.5	5.3	$ 443	$ 312
Genomic Health	$ 27	$ 63	132%	20.4	6.6	$ 1,281	$ 414
Myriad Genetics	$ 31	$ 43	40%	44.1	(0.4)	$ 1,888	$ (15)
Sequenom	$ 28	$ 41	44%	11.1	2.0	$ 454	$ 84
Average	$ 28	$ 50	81%	17.5	3.2	$ 852	$ 181
Median	$ 28	$ 43	55%	11.1	2.5	$ 454	$ 108

Source: Company filings.

While $40 million revenue run rate may seem an arbitrary figure to choose as a threshold, we believe this represents "escape velocity" for molecular diagnostics firms – the point at which continued success is much more likely. The chart below illustrates this historically (including Foundation Medicine's (FMI- Not Rated) and Veracyte's (VCYT- Not Rated) performance to date and the Street estimates for 2014-2016, shown as Year 3 through Year 5); the chart picks "Year 1" as the company's last year in it's history where revenue was roughly $10 million and "Year 2" as the first year it meaningfully exceeded $10 million as well as the several years that follow. We believe BIOC will reach the "escape velocity" $40 million revenue run rate in XXX. Consequently, we feel it appropriate to utilize a sales multiple based upon those achieved by the above firms discounted back to 2014 to set our price target. We shall be conservative and apply a multiple between the average low valuation on an EV/sales basis, 3.2x, and the average low valuation excluding Myriad Genetics' negative EV/sales multiple in 2000, or 4.1x, and discount it back to a twelve month price target by 25%.



Source: Company filings and First Call estimates.

The table below features current publicly-traded comps for BIOC. One can clearly see the huge premiums that get assigned to firms like Exact Sciences (EXAS – not rated) and TrovaGene (TROV – not rated), whose tests hold great promise, but the revenue is still on the come. On the other hand, one can clearly see the much lower multiples assigned to firms that have not yet cleared the $40 million "escape velocity" threshold discussed previously, particularly those not growing revenue rapidly. The median 2014 EV/sales multiple of 3.6x, and the average 2014 EV/sales multiple of 4.1x both fall within the 3.2x-4.1x average low EV/sales past firms have achieved the year they reached the "success threshold". As such, we feel a 3.5x EV/sales multiple on our 2016 sales estimate for BIOC is appropriately conservative, and we have discounted it back to 2015 (for our twelve-month target) at a 25% rate as previously discussed. Based upon our 2016 revenue estimate of $28.2 million and anticipated post-secondary share count of 6.4 million, we arrive at a $14.00 price target utilizing this methodology.

Company	Ticker	EV	2014 Sales	2015 Sales	2014 EV/Sales	2015 EV/Sales	Notes
Myriad Genetics, Inc.	MYGN	$ 2,857	$ 764	$ 784	3.7	3.6	Proprietary breast, colorectal, ovarian, and uterine cancer testing
Genomic Health, Inc.	GHDX	$ 790	$ 285	$ 321	2.8	2.5	Proprietary breast and colon cancer testing
Meridian Bioscience, Inc.	VIVO	$ 815	$ 195	$ 209	4.2	3.9	Proprietary tests in infectious diseases
Quidel Corp.	QDEL	$ 739	$ 176	$ 209	4.2	3.5	Proprietary tests in infectious diseases, reproductive and cancer
Exact Sciences Corp.	EXAS	$ 989	$ 19	$ 98	50.9	10.1	Colorectal proprietary screening test
Sequenom, Inc.	SQNM	$ 438	$ 211	$ 275	2.1	1.6	Mainly prenatal proprietary tests
Neogenomics, Inc.	NEO	$ 153	$ 72	$ 81	2.1	1.9	Non-proprietary & proprietary cancer testing
OraSure Technologies, Inc.	OSUR	$ 437	$ 105	$ 120	4.2	3.6	Proprietary tests in infectious diseases, substance abuse, etc.
TrovaGene, Inc.	TROV	$ 77	$ 2	$ 10	34.1	7.8	Urine-based assays, mostly in development, HPV test launched
BG Medicine, Inc.	BGMD	$ 46	$ 6	$ 13	7.4	3.6	Proprietary cardiac tests
Rosetta Genomics, Ltd.	ROSG	$ 26	$ 1	$ 4	43.3	6.9	Proprietary mRNA cancer tests
Fluidigm Corp.	FLDM	$ 976	$ 121	$ 153	8.1	6.4	Microfluidic Systems for single-cell genomics, genotyping, and sequencing
Nanosphere, Inc.	NSPH	$ 103	$ 20	$ 36	5.2	2.9	Proprietary tests in infections diseases, ultra-senstive proteins
Foundation Medicine, Inc.	FMI	$ 487	$ 59	$ 108	8.3	4.5	Proprietary testing for solid tumors and blood-based cancers
Veracyte, Inc.	VCYT	$ 225	$ 40	$ 76	5.6	3.0	Proprietary testing for thryroid and cancer, pulmonary fibrosis, lung nodules
Cepheid	CPHD	$ 930	$ 460	$ 535	2.0	1.7	Lab procedure automation for blood testing, TB testing
Cancer Genetics, Inc.	CGIX	$ 98	$ 18	$ 44	5.4	2.2	Proprietary testing in hematological and urogenital cancers
Atossa Genetics, Inc.	ATOS	$ 25	$ 10	NA	2.5	NA	Proprietary breast cancer tests
Response Genetics, Inc.	RGDX	$ 48	$ 24	NA	2.0	NA	Proprietary lung, colorectal, and gastric cancer and melanoma testing
CombiMatrix Corp.	CBMX	$ 48	NA	NA	NA	NA	Proprietary testing for natal development disorders and leukemia genomics
Vermillion, Inc.	VRML	$ 41	NA	NA	NA	NA	OVA1 ovarian cancer test, proprietary
Average					**10.4**	**4.1**	
Median					**4.2**	**3.6**	
Biocept, Inc.	**BIOC**	**3**	**$ 1**	**$ 13**	**2.5**	**0.2**	

Source: First Call, Feltl and Company estimates.

Key Model Assumptions

As Biocept is early-on in its growth as a firm, we have endeavored to be conservative in our estimates. While we have assumed the company is able to launch its pipeline tests on schedule, we have been conservative in estimating ASPs and the company's consequent revenue ramp. As the company is able to layer on additional tests, such as adding ER and PR to OncoCEE-BR and launch OncoCEE-LU, we anticipate ASPs will increase, perhaps by as much as 50% on average. However, we have modeled $600/test (below 2013's recognized $635/test) for all of 2014 and ramped the ASP slowly to $750/test in 2015, at which point we hold the ASP constant. Given our laboratory fixed cost assumptions and margin gross margin estimates, we estimate Biocept will need to reach a $2.3 million revenue run rate in a quarter to break even on a gross profit basis. This is generally below the levels historical comps have needed to reach to break even on the same basis. The table below contains the gross margin experienced by a number of molecular diagnostic firms as they reached the reached various revenue run rates. Reaching the $40+ million "success threshold" (in bold), gross margin ranges from 37.7% to 72.4% and averages 56.1%. At the "success threshold" run rate, we estimate BIOC will see gross margin in the mid-60s.

Neogenomics	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Revenue	1,885	6,476	11,504	20,015	29,469	34,371	43,484
COGS	1,133	2,759	5,523	9,354	14,254	18,588	24,056
Gross margin	*39.9%*	*57.4%*	*52.0%*	*53.3%*	*51.6%*	*45.9%*	***44.7%***
Monogram Biosciences	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Revenue	7,466	17,815	24,530	31,911	34,811	43,468	45,150
COGS	5,457	11,845	14,589	16,713	17,794	20,001	22,703
Gross margin	*26.9%*	*33.5%*	*40.5%*	*47.6%*	*48.9%*	***54.0%***	*49.7%*
Genomic Health	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Revenue	4,823	27,006	62,745	108,658	146,581	174,870	204,766
COGS	6,249	9,908	17,331	27,185	32,562	34,634	33,832
Gross margin	*-29.6%*	*63.3%*	***72.4%***	*75.0%*	*77.8%*	*80.2%*	*83.5%*
Myriad Genetics (personalized medicine)	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Revenue	5,220	8,793	17,091	26,821	34,683	43,294	71,325
COGS	3,066	3,986	7,403	10,717	12,553	13,751	20,322
Gross margin	*41.3%*	*54.7%*	*56.7%*	*60.0%*	*63.8%*	***68.2%***	*71.5%*
Clarient	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010E**
Revenue	2,238	11,439	27,723	42,995	73,736	91,599	116,500
COGS	3,813	10,948	19,777	26,807	32,936	39,107	
Gross margin	*-70.4%*	*4.3%*	*28.7%*	***37.7%***	*55.3%*	*57.3%*	
Genoptix	**2005**	**2006**	**2007**	**2008**	**2009**	**2010E**	**2011E**
Revenue	5,193	24,018	59,332	116,170	184,378	200,000	225,300
COGS	5,189	13,131	24,106	45,931	69,200		
Gross margin	*0.1%*	*45.3%*	***59.4%***	*60.5%*	*62.5%*		

In terms of operating expenses, we have modeled the company quickly ramping to seven salespeople by the end of Q2 2014 and ramping to 15-20 by the end of 2015 as implied by the company's SEC filings. For general and administrative expenses, we have modeled a $1.3 million step-up for 2014 to account for public company costs and increased personnel. We have modeled a $0.3 million step up in research and development expenses as we believe the validation of their pipeline does not require a great deal of additional spend, but for 2015 we have modeled an additional $0.9 million as we anticipate the company will attempt to validate tests for other cancers following validating tests in their existing pipeline and we do not believe the company has studied such future targets as in depth as their existing pipeline.

All told, we estimate Biocept will reach breakeven by the first half of 2016 at a run rate of ~9,000 tests per quarter; if our ASP estimates are too low, breakeven could come in late 2015.

Company Brief

Biocept is a cancer diagnostics company that has developed proprietary platforms for the capture and analysis of circulating tumor cells (CTCs) and circulating tumor DNA, from both CTCs and plasma, using a standard blood sample. At present, they have launched a breast cancer CTC test (OncoCEE-BR) on their platform and the company intends on launching additional tests targeting gastric, lung, colon, prostate, and melanoma over the coming 12-18 months. In addition, the company recently launched a clinical research services offering to aid in drug development and clinical trial support for biopharmaceutical companies.

The company is based in San Diego, California. Their laboratory has secured College of American Pathologists (CAP) accreditation and a CLIA certification for high-complexity testing.

Company Strategy

Presently, Biocept markets their testing services as lab-developed tests (LDTs) in the US market, and we would expect this to continue for the foreseeable future, although the company has said they are exploring the potential to commercialize their technology as a CE-marked in vitro diagnostic (IVD) test kit of system. In the near-term, we believe the company will focus on several strategic actions, mainly related to building their customer base, improving both launched and pipeline tests (for launch) to stay ahead of the curve, and building clinical evidence for their portfolio.

Biocept had licensed the OncoCEE-BR test exclusive to Clarient (a division of GE) prior to May, 2013. The agreement was revised last May, and Clarient no longer has exclusive rights to market OncoCEE-BR. Biocept plans to hire seven salespeople initially and grow the sales force to 15-20 people exiting 2015. To this end, in late March 2014, the company brought in Raaj Trivedi as Vice President of Commercial Operations; prior to Biocept, he was the Commercial Leader for Life Technologies' Oncomine biomarker discovery platforms where he developed numerous relationships with biopharma and academic partners. We view Mr. Trivedi coming to Biocept as a vote of confidence in the company's platform and future.

Once the initial sales team is in place, the company plans on driving business by targeting oncologists directly with their CTC and ctDNA test offerings. In addition, they will target the biopharma market; in fact, earlier this week, Biocept announced they have launched a clinical research services offering. They are now offering their blood-based biomarker testing service for clinical trial screening and testing as well as clinical trial and drug development support services. Obviously, these would include ongoing patient monitoring and trial inclusion identification. This is an area where revenue and the company's backlog can ramp quickly. In many cases, a new biopharma partner can increase a molecular diagnostic firm's backlog by over $5 million, sometimes multiples of that level.

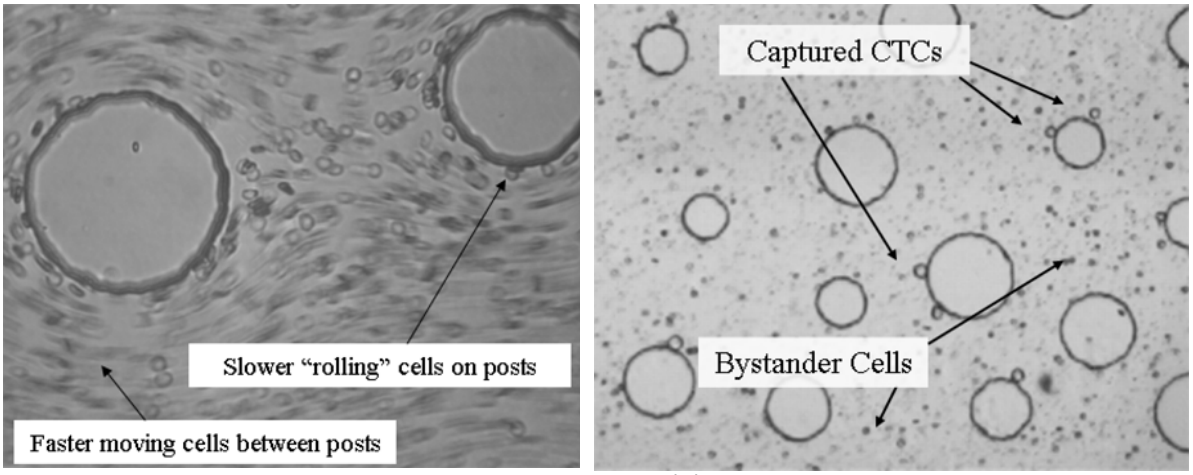
Biocept's Platform and Future Tests

CEE Technology Overview

The company's CEE (cell enrichment and extraction) technology features a microfluidic channel with ~9,000 randomly sized and positioned binding posts (capture elements) designed to enable rare cell capture. The size, shape, and positioning of the posts prevent straight-line, regularized streamline flow, maximizing the number of collisions between posts and cells. The posts are distributed widely to minimize channel blockage; we know of at least one would-be competitor who ran into issues with channel sizes and is now defunct. The CEE capture device is designed to cause disrupted flow, key to maximizing interactions between the posts and cells. The channels are exact replicates manufactured out of PDMS

(polydimethylsiloxane, the most widely used silicon-based organic polymer) using microelectromechanical system (MEMS) manufacturing, coated with streptavidin then bonded to a glass coverslip. The interior of the channel also has a layer of polyethylene glycol (PEG) grafted to the surface to inhibit white blood cell adherence. The inner volume of the channel is 20 microliters, reducing usage of reagents needed for post-capture analysis. In addition, Biocept has custom designed a microfluidic syringe pump that accepts up to ten channels and minimizes variability in flow between channels, creating a more predictable flow.

Prior to exposing a sample to the channel, the sample is incubated with a selection of biotin-conjugated antibodies for ~30 minutes in solution, offering the platform flexibility (the ability to customize antibody cocktails) as well as giving an "additive" property to binding as compared to channel-immobilized antibodies; the antibody cocktail increases the chances to create multiple biotin-streptavidin interactions when passed through the channel, wheras channel-immobilized antibodies can create the opportunity for antibodies to dilute one another. Once the sample is incubated and exposed to the channel, rare cells are captured on the streptavidin-coated posts (as seen in the image on the right below), with, again, the biotin-streptavidin bond being stronger and occurring faster than an antigen-antibody bond, improving capture. Additionally, the sample is treated with Biocept's CEE-Save reagent to reduce white blood cell adhesion to the device, further minimizing non-specific capture. In the image on the left below, one can see how the channels use disrupted flow – as cells flow through at high rates, they become forced into the posts, rolling slowly around the posts, capturing rare cells through the streptaviding-biotin interaction. Non-rare cells roll past the posts without binding and are not captured. Non-specific "bystander cells" are washed out during post-capture processing.



Source: Company website.

A "Highly Technical" View of the Biocept Platform Versus Certain Similar Approaches

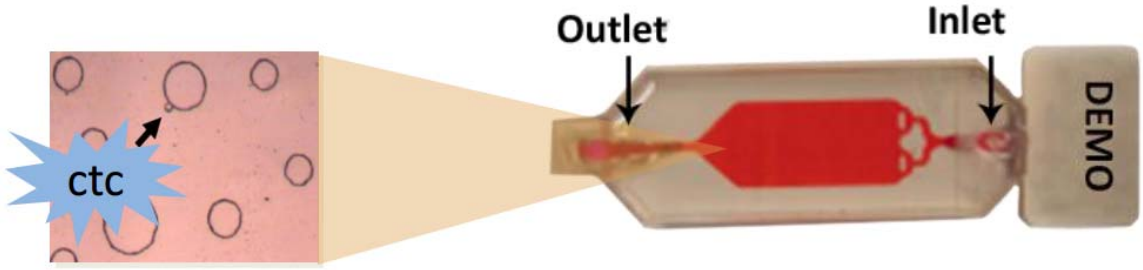
CTC capture approaches, naturally, are attempting to isolate a very small fraction of cells. Firms that have attempted approaches similar to Biocept's - have had evenly spaced binding posts - have tended to see their channels clog up. Anyone who has ever skipped class or work to watch "The Price is Right" knows that "Plinko" is one of the more exciting games on the show (seen pictured on left below). The evenly spaced binding posts are similar to the layout of the "Plinko" board. If we assume each peg on the board is a ferrous metal and certain "Plinko" chips have magnets attached to their outside (think refrigerator magnets), if one tried to drop millions of "Plinko" chips at the same time, some with the magnets, it wouldn't be long before the chips coming in plugged up the board and it would not be surprising to see zero chips reach the prize slots. If we take another exciting example, pinball machines, and the "multi-ball" gameplay feature. If we think of a "bumper" field (as seen in the image on the right below) in conjunction with a "multi-ball" game feature, once "multi-ball" has been enabled and balls are bouncing all over the bumper field it's highly likely that each ball will touch at least one bumper. Of course, pinball machine designers realize that a game where the balls merely bounce around the bumper field racking up points is not particularly beneficial for the profits of arcade owners nor much excitement for players; hence, playfield bumpers are usually not configured in a regularized pattern. Now, picture the bumpers being a ferrous metal, and a several different types of pinballs, some that are strong magnets, some that are weak magnets, others ones that have no magnetic charge at all. Those with weak magnets would be similar to designs using channel-immobilized antibodies – they would be able to stick to the ferrous bumpers if conditions were just right, those with no charge would fall down quickly towards the flippers, and those with the strong magnets would be much more likely to stick to the bumpers and stay. The strong magnet example is similar to the uses of streptavidin-biotin approach in Biocept's platform and the non-uniform bumper layout is

similar to their randomly spaced binding posts and different binding post sizes. Just as in the game of pinball, all the balls coming in are likely to hit at least one bumper, in Biocept's design the same holds true for CTCs.

Source: Google images.

OncoCEE Platform Brief

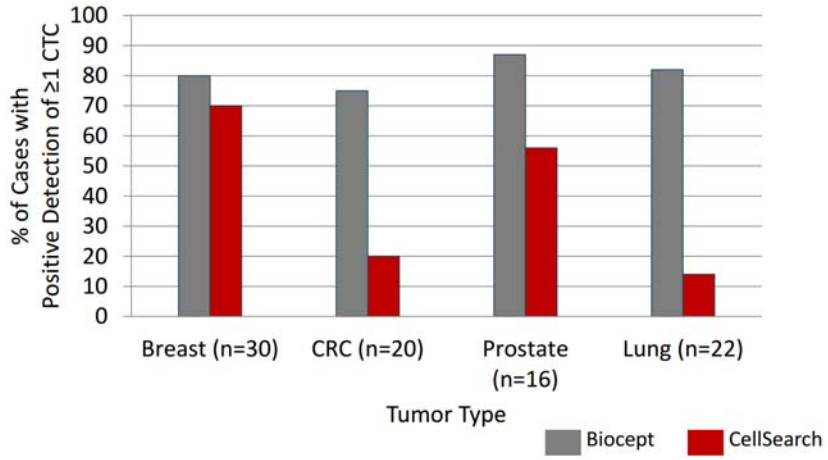
Biocept's OncoCEE CTC platform is able to detect, enumerate, and allow for cytogenetic or molecular analysis in blood or bone marrow samples. It utilizes a patented arrangement of binding posts (the large circles on the left of the image below) designed to optimize the capture of CTCs. As described above, the microfluidic channels are mounted on a glass slide and are transparent, allowing for direct microscopic visualization of captured cells. Importantly, captured cells can be released for further analysis, whether it be using CEE-Selector mutation analysis or next-generation sequencing either at Biocept's facilities or partner sites.



The platform utilizes a proprietary CTC antibody capture cocktail to isolate and analyze CTCs in the company's on-site CLIA lab to reduce false positives via "no result" or "non-reportable" testing outcomes when compared to other CTC tests. Further, it is not limited to a single capture antibody, nor is it limited to epithelial CTCs. CTC enrichment is usually conducted using antibodies to epithelial cell adhesion molecule (EpCAM) with detection using cytokeratin (CK) antibodies. Unfortunately, not all tumors express EpCAM or CK and these can be downregulated during the epithelial-to-mesenchymal transition, which is thought to be critical in the spread of cancer (metastasis).

The company currently offers one test, the OncoCEE-BR for breast cancer, for detecting CTCs and determining the status of the HER2 hormone in patients via FISH probe, and is also developing other solid tumor testing for non-small cell lung, colorectal, gastric, and prostate cancers in addition to melanoma.

In a late-2011 publication, Biocept performed better in detecting CTCs in multiple types of cancer, including breast, colorectal, prostate, and lung cancers, usually be a wide margin, as shown in the chart below using their CEE technology as compared to Janssen's CellSearch. While we don't have comparative data versus other competitors, CellSearch is the most widely utilized CTC platform.



Source: Pecot, et al. Cancer Discovery, December 2011, company presentation.

CEE-Selector Platform Brief

The CEE-Selector platform allows for the genomic analysis of both CTCs and ctDNA, enabling mutation detection with improved sensitivity and specificity. It builds on Biocept's CEE technology by analyzing the ctDNA found in blood plasma as well as CTCs. Additionally, it can work with both DNA and RNA and is compatible with sequencing and PCR instruments. Biocept's internal data imply mutation determination sensitivity of 10x-100x greater than competing platforms, and CEE-Selector is able to detect a singl mutation out of more than 10,000 normal DNA samples.

OncoCEE and CEE-Selector Targets

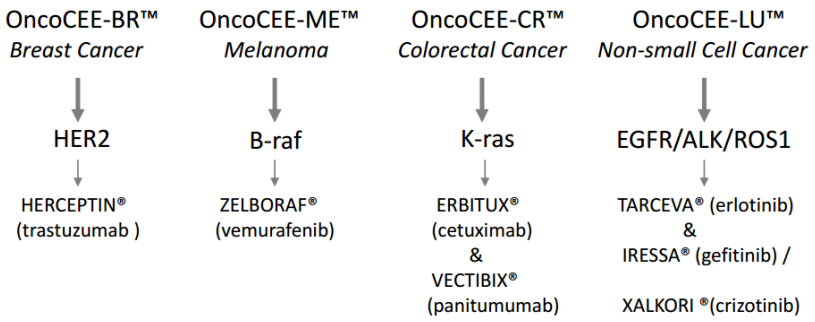
In addition to the markers found in the table below, Biocept has added MET copy number analysis (focusing on non-small cell lung cancer and gastrointestinal cancers) and MYC copy number and loss of gene regions in CTCs (focus on prostate cancer). The full suite of tests is likely only available as part of its clinical research services offering, at least until clinically relevant targets are identified by CEE-Selector for those that presently do not have them.

Product	Tumor Type	OncoCEE™ CTC	CEE-Selector™
OncoCEE-BR™ (launched)	Breast	Enumeration of CTCs , HER2, ER, PR	Currently no clinically actionable mutations identified
OncoCEE-GA™	Gastric	Enumeration of CTCs, HER2	Currently no clinically actionable mutations identified
OncoCEE-LU™	Lung	Enumeration of CTCs, ALK, ROS1	EGFR, K-ras, B-raf mutations
OncoCEE-CR™	Colon	Enumeration of CTCs, EGFR	K-ras, B-raf mutations
OncoCEE-PR™	Prostate	Enumeration of CTCs, AR, and PTEN deletion (blood or bone marrow)	Currently no clinically actionable mutations identified
OncoCEE-ME™	Melanoma	Enumeration of CTCs	B-raf and N-ras mutations

Source: Company presentation.

Biocept appears to prefer targeting markers and mutations where a drug is already available, as seen in the table below with its development programs. We believe this makes sense, as there are therapeutics available to treat patients with such mutations and it allows for personalized medicine in liquid biopsy format. In addition, as these cancers progress,

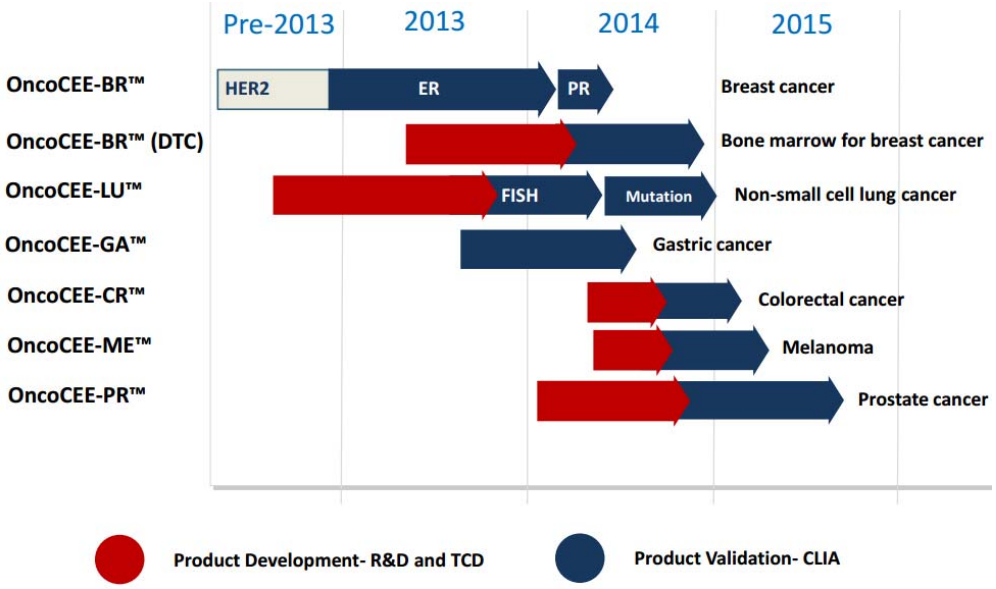
biopsy tissue may not be available due to the patient's condition, as previously discussed, leaving Biocept's approach an interesting solution to making the correct treatment decision as a patient's cancer mutates.



Source: Company presentation.

Biocept's Progress and Planned Launches

To date, Biocept has launched OncoCEE-BR for HER2 (human epidermal growth factor receptor 2) and plans on validating versions for ER (estrogen receptor) and PR (progesterone receptor) characterization by Summer 2014. These three mutations provide one of the major ways of defining types of breast cancer – endocrine receptor (ER or PR) positive, HER2 positive, triple negative, or triple positive. Over the next twelve months, Biocept intends on validating tests for non-small cell lung cancer, gastric cancer and colorectal cancer. By the end of 2015, they plan to have completed validation on melanoma and prostate cancer tests as well, as seen in the table below. For a list of the targets characterized by Biocept's tests, please refer back to the "OncoCEE and CEE-Selector Targets" section above.



Source: Company presentation.

Circulating Tumor Cells (CTCs) and Liquid Biopsies

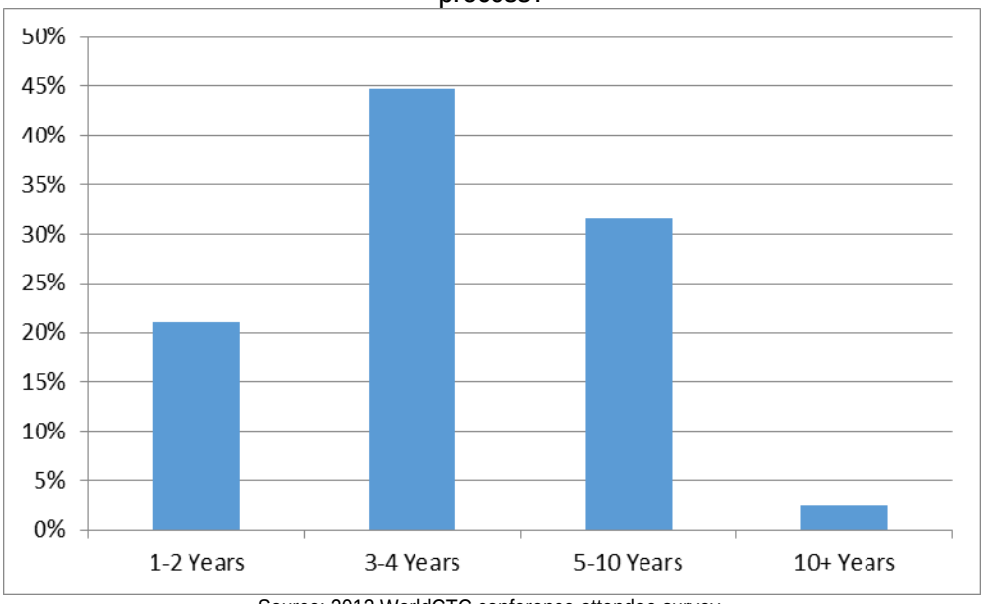
Circulating tumor cells, or CTCs, are shed from tumors into the bloodstream, acting as surrogates for tumors and allowing for the metastasis (or spreading) of cancer throughout the body. CTCs are rarely found in healthy people or those with malignant tumors. In a study published in the Journal of Cell Biology from 2011, of 295 healthy subjects, 3% had more than one CTC detected in blood samples analyzed by Janssen Diagnostics' CellSearch CTC test, which enumerates CTCs. In studies of patients with metastatic breast, prostate, or colorectal cancer, studies have shown CTCs to be more prevalent. This would tend to lend support for cancer screening via blood tests, or "liquid biopsies". CTC enumeration has also been found as helpful to monitor the progression of cancer in afflicted patients. Both CTC enumeration as well as capture and downstream testing of CTCs via typical molecular diagnostic methods also serve as a favorable alternative to the current standard of care for cancer monitoring today, solid tissue biopsies, as they do not require invasive surgery and can be performed periodically. Liquid biopsies address several shortfalls of tissue biopsies, primarily the ability to continuously

monitor cancerous progress that is impractical for tissue biopsies, and the cost (both financially and to the patient's health) of removing a piece of tissue from a patient via invasive surgery.

Industry Opinion of CTCs

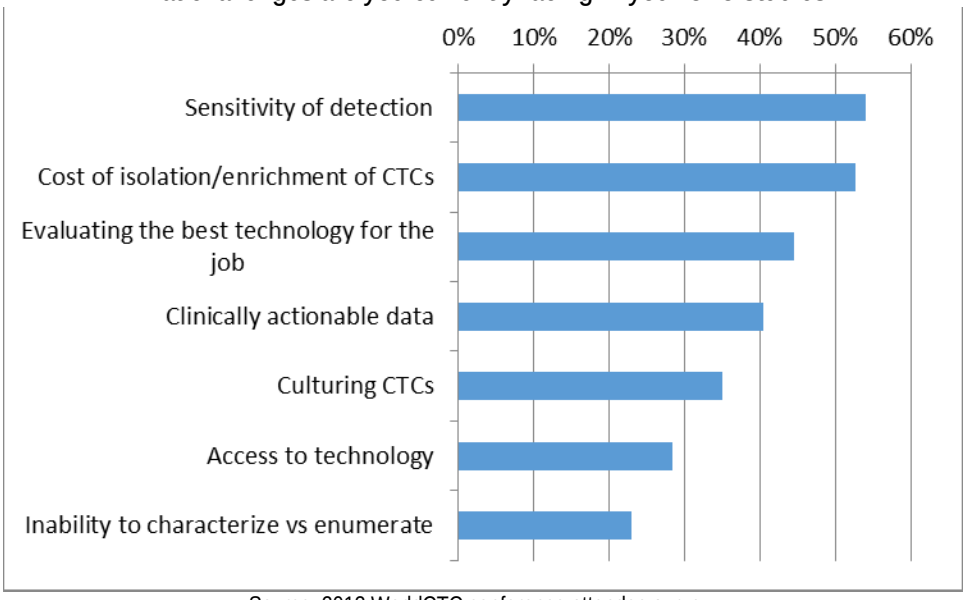
Late last year, the WorldCTC conference was held in Boston and was attended by pharmaceutical and biotech firms as well as academics and solutions providers. Of the attendees, 83% were affiliated with drug development firms (pharma and biotech). The organizers of the conference surveyed attendees, and we find the responses offered below particularly interesting. In the first chart, respondents overwhelmingly indicate (~66%) they expect CTCs to become an important part of clinical decision making. In the second chart, the key attributes necessary to overcoming the challenges of CTC studies appear to be quite similar to Biocept's focus. Granted, this is a conference attended by those highly focused on CTCs, so we would doubt all clinicians express similar opinions, but attendees are likely to be in the tought-leader category other clinicians look to, which we view as a positive for Biocept and CTCs in general.

What do you think is the timeline for CTCs to become an important part of the clinical decision making process?



Source: 2013 WorldCTC conference attendee survey.

What challenges are you currently facing in your CTC studies?



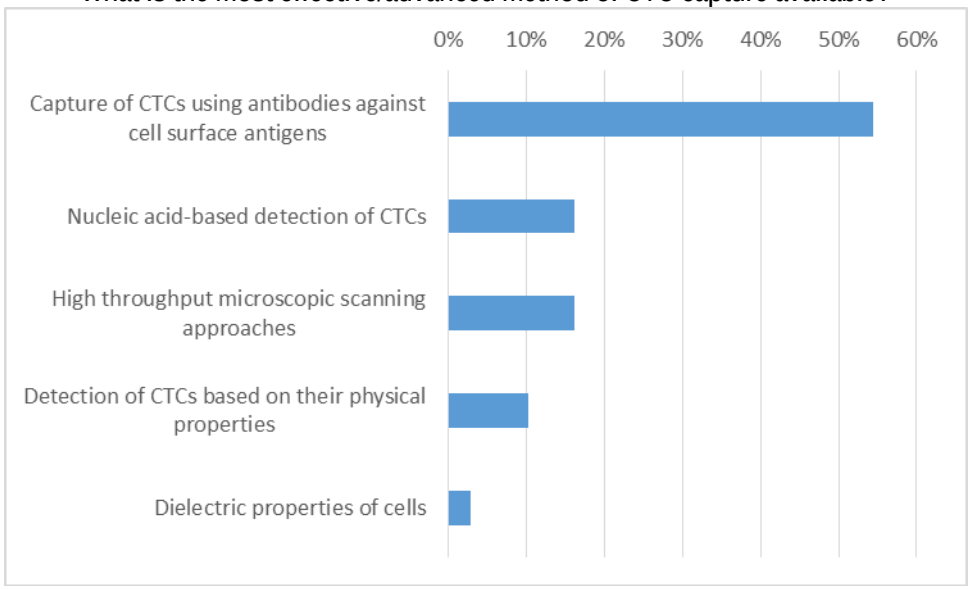
Source: 2013 WorldCTC conference attendee survey.

Competition

A number of techniques, both physical and biological are used or have been used to capture CTCs over the past decade or so. In terms of physical techniques, size filtration, microscopic morphology and density gradient centrifugation have been utilized, while on the biological side, immunomagnetic isolation, immunoflourescent microscopy, and flow cytometry have been used. A number of CTC isolation platforms utilize multiple of the aforementioned to capture or otherwise isolate CTCs. Once cells are captured, a number of techniques are used for analysis, but they tend to be the same or very similar to standard diagnostic techniques, whether it be FISH, PCR, or next-generation sequencing (NGS). We have separated the competing approaches into two categories, those reliant mainly on traditional CTC capture and enumeration as introduced initially be Janssen Diagnostics which use antibodies as their main manner of detection (labeled "Traditional CTC Definition Dependent" below) and those that use combination approaches (labeled "Non-Traditional"), which tend to rely on specialized instruments. We have also discussed competition from those that use more traditional approaches to diagnose cancer in the "Other Non-CTC Approaches to Diagnosing Cancer" subsection.

Based on the responses to the 2013 WorldCTC conference attendee survey, it appears Biocept's approach is considered the most advanced by those focused on CTCs, as shown in the table below. As previously discussed, however, there are reasons to believe that Biocept's streptavidin-biotin approach may have superior characteristics to the antibody methods used in "traditional" approaches such as CellSearch from Janssen Diagnostics.

What is the most effective/advanced method of CTC capture available?



Source: 2013 WorldCTC conference attendee survey.

Traditional CTC Definition Dependent (EpCAM, CK, CD45 and DAPI)

Janssen Diagnostics, LLC markets the CellSearch Circulating Tumor Cell Kit and competes on CTC enumeration of cancers of epithelial origin using CD45-, EpCAM+ and cytokeratins (CK 8, 18+, and/or 19+) in whole blood and is targeted at metastatic breast, colorectal and prostate cancers. CellSearch works by tagging antibody-coated magnetic beads to recognize cell surface antigens which are then labeled with fluorescent dyes that can be quantified by a semi-automated fluorescent-based microscopy system. The CellSearch CTC test is FDA 510(k)-cleared (originally in early 2004 for monitoring metastatic breast cancer) and offered by roughly a dozen laboratories around the US and Canada in North America. A number of payors reimburse for enumeration of CTCs via CellSearch, usually under CPT codes 86152 and 86153, making it the only CTC test with relatively broad reimbursement. However, Palmetto indicated recently it would be moving away from these codes, making the playing field between Janssen and others, such as Biocept, more fair.

EPIC Sciences utilizes nucleated cells dispensed as a single layer on their proprietary Aqua glass slides. The slides can each hold ~3 million nucleated cells, which is equivalent to 0.5mL of blood. The slides are frozen, thawed, then stained with EPIC's CTC Odyssey assay, which contains a cocktail of CK, CD45, DAPI, and a characterization antibody (for example, a protein drug target). The slides are then scanned by the company's Pyxis fluorescent scanner and the images are analyzed (on over 90 features) by their Atlas software, which flags potential CTCs using an algorithm. Once the CTCs are flagged, a

trained lab employee confirms. If further genetic analysis is required, the coverslip is removed and FISH is preformed and read by a trained reader scores the regional white blood cells to determine the negative control.

Cynvenio Biosystems operates a CLIA lab outfitted with LiquidBiopsy, the firm's automated immune-magnetic system along with patented microfluidic chip to recover CTCs from whole blood. LiquidBiopsy employs a three-layer laminar flow chip which ultimately deposits CTC EpCAM+, CK+, CD45- and DAPI+ cells into a single tube for further analysis. The lab's offerings range from CTC recovery with CK, DAPI, and CD45 staining along with a scanning and enumeration report to PCR to NGS. Patient samples are shipped in a stabilized unrefridgerated kit.

Non-Traditional CTC Definition Dependent

Apocell has developed ApoStream enrichment (see prototype device shown below), which they believe is capable of capturing and identifying CTCs from no-epithelial based canscers as well as increasing the number of recovered CTCs from epithelial-based cancers. Additionally, they imunophenotype CTCs via quantitative image analysis using their proprietary Laser Scanning Cytometry. The company states ApoStream has been proven superior to immunomagnetic CTC enrichment approaches. Their technology allows for enumeration as well as downstream analysis and is based on exploiting the differences in dielectric properties (polarizability) of cells, which in turn is dependent on cell diameter, membrane morphology and conductivity. Apocell offers clinical trial services, although it is unclear whether it does so at this point using their ApoStream prototype platform

Source: December 2013 poster presentation by Jafferji, et al.

Clearbridge Biomedics has developed the ClearCell FX inertial focusing system and ClearCell CX cell traps. The ClearCell FX relies on the company's CTChip FR technology to isolate CTCs based on size and inertia relative to other blood components. Once enriched, the captured CTCs can then be analyzed by a number of techniques, including FISH, Q-PCR, and NGS. The company claims enrichment of CTCs "up to 10,000x". Their system is a non-antibody approach and the company expects to make the system available in the first half of 2014 according to their website. Clearbridge is based in Singapore.

Source: Company website.

Fluxion Biosciences markets the IsoFlux System, a microfluidic platform shown below, for the isolation of rare cells, including CTCs, stem cells, and immune cells. The system uses immunomagnetic separation and up until recently, they

offered only magnetic beads functionalized with antibodies, although they have since announced the availability of streptavidin-coated magnetic beads for use with biotinylated antibodies; this approach, as previously discussed, provides benefits over an antibody-only approach in capturing cells. Fluxion claims independent data has shown superior target cell recovery compared to currently available cell enrichment devices, although on average their data in terms of percentage of patients with over five CTCs captured looks similar to the Biocept platform data shown previously. The IsoFlux system has been CE marked, but is not cleared by the FDA for in vitro diagnostics (IVD) use, although CLIA certified labs may use it for lab-developed tests (LDTs).

Source: Company website.

RareCells offers the Rarecells System (formerly known as the "ISET Device", shown below), which isolates by size of epithelial tumor (ISET) cells in Europe. The Rarecells system separates the CTCs through filtration in some manner and the company claims it able to detect a CTC in 1 in 40,000,000 (40 million) cells.

Source: Company website.

ScreenCell offers the ScreenCell isolation devices in the form of a kit (shown below), claiming CTC separation from blood in three minutes. The microfiltration kit contains DNAse- and RNAse-free filtration devices with a collection tube and a specific buffer and are disposable. A 2011 study showed the device detected 91% of CTC cells when five spiked cells were included in a healthy patients blood, and 74% when two spiked cells were used.

Source: Company website.

Silicon Biosystems, acquired by Menarini Group in September 2013 for an undisclosed sum, offers the DEPArray system for the capture and characterization of CTCs. The technology works by applying a non-uniform electric field to polarizable cells suspended in a liquid, using an electrokinetic principle, dielectrophoresis (DEP), it traps cells in DEP "cages", which

consist of electrodes in an array that are manipulated by an electric field. Moving the charge pattern moves the trapped cell once captured. The system can then select the cells using their image-based system, allowing it to recover individual cells.

Other Non-CTC Approaches to Diagnosing Cancer

Beyond current operators in CTC and ctDNA testing, other players in the broader oncology diagnostics market that do not have any current CTC/ctDNA offerings, including Cancer Genetics, Biodesix, Caris, Clarient, Foundation Medicine, Neogenomics, Response Genetics, Agendia, Genomic Health, and Genoptix, also focus marketing efforts on oncologists and pathologists and could develop CTC or ctDNA tests in the future. There are also larger lab services firms, including Sonic USA, Quest Diagnostics, and LabCorp, that offer more generalized cancer diagnostic testing but have great scale and influence when marketing their services as well as significantly greater financial resources. In breast cancer HER2 testing, Atossa Genetics markets ArgusCYTE and competes on HER2 analysis using HER2 mRNA, while Biocept uses FISH analysis.

In addition to competitors currently operating in the personalized oncology field, it is reasonable to expect pharmaceutical and biopharmaceutical companies, particularly those already operating in molecular diagnostics, will continue to invest resources in new research and technologies in this space in the wake of the FDA's recent simultaneous approvals of companion diagnostics and drugs, featuring diagnostics from Abbott Labs, Roche, and bioMerieux being approved for cancer therapies Xalkori, Zelboraf, and Tafinlar, respectively. We believe there is a high probability the FDA will have more simultaneous approvals of therapies with companion diagnostics in the future, as the FDA has only had four instances of simultaneous approvals since 2010.

Cancer Diagnostics Overview

Cancer (malignant neoplasm) is characterized by unregulated cell growth resulting from a combination of environmental and hereditary factors (although only 5-10% are solely hereditary). There are a number of methods to diagnose cancer of varying complexity and accuracy.

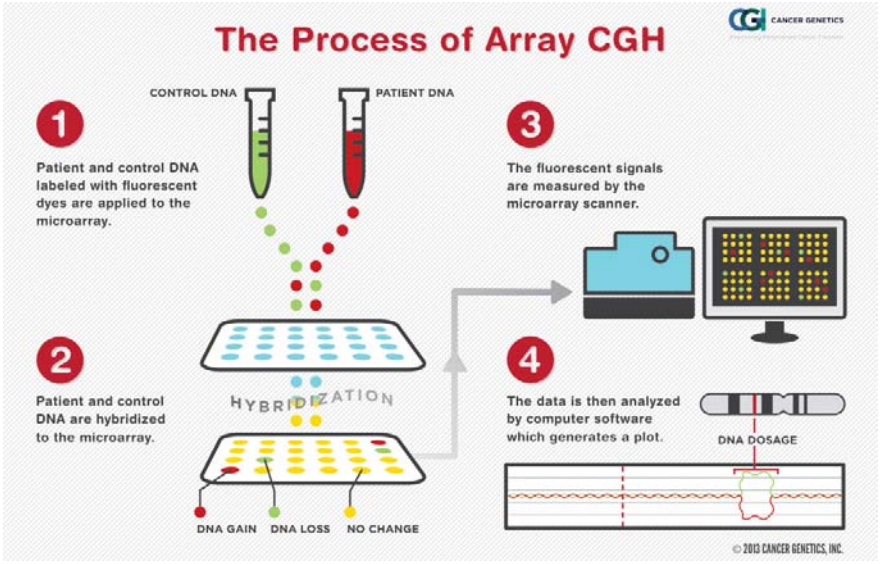
The simplest test would be a biopsy, whereby a small tissue sample is removed and viewed under a microscope (histology – the study of microscopic anatomy, or more specifically, histopathology – the microscopic study of diseased tissue), usually after sectioning and staining the sample. Often these samples are delivered to the laboratory in formaline-fixed paraffin embedded (FFPE) format. Fixation utilizing formalin leads to degradation of DNA in tissue. However, extraction and amplification for analysis is possible with appropriate protocols. If the tumor is filled with fluid, a fine needle aspiration biopsy can be done by inserting a long, thin needle to obtain a sample.

Diagnostic imaging can also be used to detect tumors – X-rays, CAT scans, MRIs and ultrasounds are all used to find cancer. These imaging modalities have improved over the years, and as a result, less exploratory surgery is done today than in the past. For example, a few decades ago, before the improvement in CAT scans, a staging laparotomy was often done in the staging of Hodgkin's lymphoma, where the surgeon would remove the spleen and take biopsies in multiple areas to determine the cancer's staging.

Naturally, blood tests often uncover cancer. For instance chronic lymphocytic leukemia (CLL) is many times initially diagnosed through a routine complete blood count (CBC) test indicating a high white blood cell (lymphocyte) count. Another common example would be using a prostate specific antigen (PSA) blood test to diagnose prostate cancer.

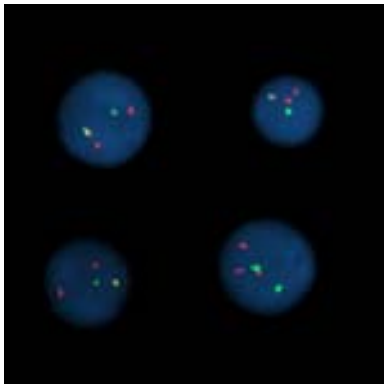
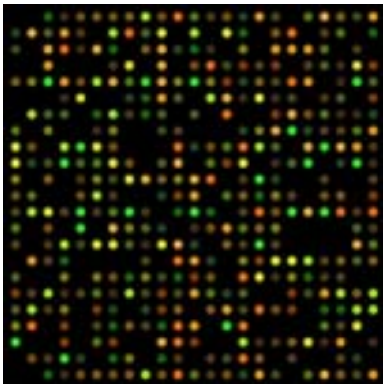
An Imperfect, Unorthodox Analogy on Genomic Testing

DNA detection methodologies have improved over the years, progressing from DNA FISH probes (first described in 1978) to DNA microarrays (first described in 1987, but feasibly implemented in the mid-to-late 1990s, and explained in the graphic below) to the present next-generation sequencing (NGS), which is the current state of the art.



Source: Cancer Genetics website.

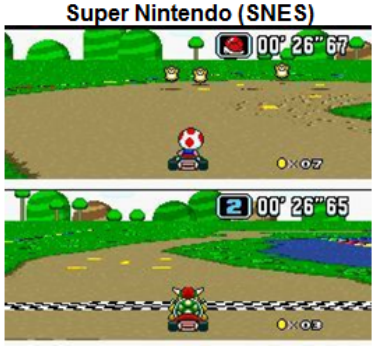
Each of these technologies features a different level of resolution, as seen in the table below. For reference sake, the human genome has over 3 billion base pairs.

FISH Probe	Microarray	Next-Generation Sequencing
		
Resolution		
~1-2Mb	~1-2Kb	1-2 nucleotides
Market Maturity		
Mid-High	Low-Mid	Emerging

As a means of comparison, we would like to present a somewhat unorthodox analogy comparing DNA detection technologies with the advancement of video game console technology and its subsequent emulation. The video game systems in the table below exhibit a roughly thousand-fold improvement in resolution (defined here as horizontal resolution * vertical resolution * color depth) sequentially, very similar to the resolution improvement the DNA detection technologies in the table above show from one to the next.

Atari 2600

Super Nintendo (SNES)



Nintendo Wii

Just as the improvement in video game graphics has offered gamers a more realistic experience, improved DNA detection capabilities bring researchers a more complete picture as to how a cell's genome affects diseases (and their treatment). However, to make the determination which genes may matter to certain disease states, researchers first must uncover them and their impact. These discoveries are akin to reverse engineering, or in the computer world, emulation.

A Brief History of Video Game Console Emulation

Early video game consoles, such as the Atari 2600, had very slow processors (1.19MHz in the 2600's case, approximately 1,000x slower than today's smartphones), but in order to successfully emulate (duplicate the behavior) these systems in software, much more processing power was required. In 1993, Intel introduced the Pentium processor (running at 66MHz), which gave programmers sufficient power to develop software emulators for early consoles. Activision (ATVI – not rated) was the first to develop an Atari 2600 emulator in 1995 (with their Activision Atari 2600 Action Pack) and a number of other early video game consoles saw emulators developed in the mid-1990s as well (including the Super Nintendo in 1996). Many, if not most, of these console emulators were developed by individuals or groups who were forced to reverse engineer each system through trial and error as only licensed developers had access to each system's documentation and were under legal obligations to not disclose it. The most recent generation of consoles nearly all have ongoing efforts to emulate them, but improvements in processor and graphics card performance will likely be necessary before they can feasibly recreate the console experience.

Analogue to Genomic Testing

Our analogy (admittedly perhaps a bit strained) seeks to make the point that useful genomic testing is similar to emulation of video game consoles in several ways. If we imagine the human genetic code is akin to a video game console (and the software code which it runs) in the sense that we "know" what the code says but don't necessarily know what it means, it clearly is a nontrivial problem to decipher what matters. Even with the original developers' documentation furnished by the console's creator, emulator authors still struggle with undocumented features of certain chips or have to deal with edge cases, such as the game cartridge itself containing a specialized chip (such as the Mode 7 chip in the SNES Super Mario Kart game cartridge). While we'll never have the developers' documentation for the human genome, we will hopefully be able to reverse engineer its meaning given enough time and samples. Simple games, not using the full capabilities of early video game consoles are relatively easy to emulate – somewhat similar to how FISH probes are generally targeted at the "basics" - well known biomarkers with clinical relevance already established. Emulating more sophisticated features of consoles generally requires a lot more computing horsepower and a great deal more trial and error, which is similar to microarrays – a great deal more development is necessary to establish clinical significance. Next-generation sequencing (NGS) represents a greater jump still as it looks at the genome at an individual nucleotide level and would be akin to emulating every signal emanating from every pin on every chip contained within both the console and game cartridge, which obviously requires massive effort. Such an endeavor would allow for perfect emulation, but, even for simple consoles, has not yet been accomplished. NGS holds incredible promise for the treatment of disease, but reverse engineering the meaning of the genome at the nucleotide level will require appropriate samples, massive processing power and incredible dedication.

Management

Michael Nall - President and Chief Executive Officer

Michael Nall has over 25 years of experience working in the commercialization of diagnostics and devices, and has been at Biocept since 2013. Mr. Nall was previously the GM of North American Sales and Marketing at Clarient Diagnostic

Services, a subsidiary of GE with $110 million in revenue, from 2002 through August of 2013, a period that included the 2010 acquisition of the firm by GE Healthcare. Prior to joining Clarient, Mr. Nall worked in commercial leadership roles from 1988 through 2002 at Impath, American Cyanamid, Maquet Surgical, Strato Medical, Horizon Medical, and Columbia Vital Systems.

William Kachioff – Senior Vice President of Finance and Chief Financial Officer

William Kachioff has over 20 years of experience in life sciences, and joined Biocept in 2011. Prior to joining Biocept, Mr. Kachioff was VP and CFO at Althea Technologies, a pharmaceutical contract manufacturer, from 2009 to 2011. Previously, Mr. Kachioff served in a variety of senior financial management roles at various firms from 1999 to 2009 including MicroIslet and Cutera.

Lyle Arnold, Ph.D. – Senior Vice President of Research and Development, Chief Scientific Officer

Dr. Arnold is a biotechnology entrepreneur and executive affiliated with Biocept since 2010. Prior to joining Biocept, Dr. Arnold was VP of Research at Gen-Probe from 2003 to 2009. Dr. Arnold has served in senior management or scientific roles at Molecular Biosystems, Genta, Synteni, Incyte Genomics, and Oasis Biosciences. He has recently founded Aegea Biotechnologies and serves on the board of directors at Asuragen and Aegea; and holds over 36 issued patents with over 140 patents pending.

Farideh Z. Bischoff, Ph.D. - Vice President of Translational Research and Clincial Development

Dr. Bischoff joined Biocept in 2007 and was formerly a full-time faculty member in the Department of Obstetrics/Gynecology at Baylor College of Medicine. She has conducted research and focused on clinical assays relevant to non-invasive (prenatal) genetic testing and more recently cancer screening and surveillance. Dr. Bischoff has been a key investigator in a multi-center NIH/NICHD funded study focused on establishment of protocols and investigations into the clinical utility of circulating rare fetal cells as well as cell-free DNA/RNA for noninvasive prenatal genetic diagnosis. She was also charged with establishment and supervision of the molecular cytogenetic pre-implantation genetic diagnostic (PGD) program at Baylor College of Medicine.

Biocept, Inc. (BIOC)

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Income Statement (000s)	2012	Q1	Q2	Q3	Q4	2013	Q1	Q2	Q3	Q4	2014	Q1	Q2	Q3	Q4	2015	2016	2017
Revenue	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.1**	**0.4**	**0.8**	**1.2**	**1.5**	**2.3**	**3.6**	**5.1**	**12.5**	**28.2**	**46.4**
Cost of revenues	1.2	-	-	-	-	2.3	0.7	0.7	1.0	1.3	3.7	1.9	2.3	2.7	3.1	10.0	11.1	15.4
Gross profit	(1.1)	(0.5)	(0.5)	(0.6)	(0.6)	(2.2)	(0.6)	(0.7)	(0.7)	(0.6)	(2.5)	(0.3)	0.1	0.8	2.0	2.6	17.1	30.9
Gross margin	*-999.6%*	*-1456.7%*	*-1126.5%*	*-1839.4%*	*-2933.7%*	*-1635.6%*	*-2083.3%*	*-1083.3%*	*-182.5%*	*-78.3%*	*-210.0%*	*-23.0%*	*2.9%*	*23.3%*	*39.4%*	*20.5%*	*60.7%*	*66.7%*
Research and development expenses	6.6	0.7	0.7	1.0	0.7	3.1	0.8	0.8	0.9	0.9	3.4	1.0	1.0	1.1	1.2	4.3	4.8	4.8
General and administrative expenses	2.1	0.5	0.5	0.8	0.8	2.5	0.9	0.9	1.0	1.0	3.8	1.0	1.0	1.0	1.0	3.9	4.4	5.0
Sales and marketing expenses	0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.6	0.8	1.0	2.6	1.2	1.4	1.6	1.7	5.9	8.9	12.2
Total operating expenses	-	-	-	-	-	-	2.0	2.3	2.6	2.8	9.8	3.1	3.4	3.6	3.9	14.0	18.1	22.0
Operating income (loss)	**(10.5)**	**(1.8)**	**(1.7)**	**(2.4)**	**(2.1)**	**(7.9)**	**(2.7)**	**(3.0)**	**(3.3)**	**(3.4)**	**(12.3)**	**(3.5)**	**(3.3)**	**(2.8)**	**(1.9)**	**(11.5)**	**(1.0)**	**9.0**
Operating margin	*-9610.4%*	*-5034.6%*	*-3600.5%*	*-7438.4%*	*-10949.7%*	*-5917.9%*	*-8875.0%*	*-4937.5%*	*-905.1%*	*-458.2%*	*-1026.6%*	*-231.2%*	*-141.0%*	*-78.7%*	*-36.4%*	*-91.4%*	*-3.4%*	*19.3%*
Other income (expense)	(0.0)	(0.2)	(0.2)	(0.5)	(0.4)	-	-	-	-	-	-	-	-	-	-	-	-	-
Income (loss) before income taxes	(12.3)	(1.9)	(2.0)	(2.9)	(2.5)	(9.2)	(2.7)	(3.0)	(3.3)	(3.4)	(12.3)	(3.5)	(3.3)	(2.8)	(1.9)	(11.5)	(1.0)	9.0
Income tax expense	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	3.6
Tax rate	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*40.0%*
Net income (loss)	**(12.3)**	**(1.9)**	**(2.0)**	**(2.9)**	**(2.5)**	**(9.2)**	**(2.7)**	**(3.0)**	**(3.3)**	**(3.4)**	**(12.3)**	**(3.5)**	**(3.3)**	**(2.8)**	**(1.9)**	**(11.5)**	**(1.0)**	**5.4**
EPS																		
Basic	**$ (76.43)**	**$ (10.67)**	**$ (10.83)**	**$ (15.72)**	**$ (13.57)**	**$ (50.80)**	**$ (0.91)**	**$ (0.67)**	**$ (0.74)**	**$ (0.78)**	**$ (3.05)**	**$ (0.55)**	**$ (0.52)**	**$ (0.44)**	**$ (0.29)**	**$ (1.79)**	**$ (0.15)**	**$ 0.84**
Diluted	**$ (76.43)**	**$ (10.67)**	**$ (10.83)**	**$ (15.72)**	**$ (13.57)**	**$ (50.80)**	**$ (0.91)**	**$ (0.67)**	**$ (0.74)**	**$ (0.78)**	**$ (3.05)**	**$ (0.55)**	**$ (0.52)**	**$ (0.44)**	**$ (0.29)**	**$ (1.79)**	**$ (0.13)**	**$ 0.62**
Weighted average shares outstanding																		
Basic	0.2	0.2	0.2	0.2	0.2	0.2	2.9	4.4	4.4	4.4	4.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Diluted	0.2	0.2	0.2	0.2	0.2	0.2	2.9	4.4	4.4	4.4	4.0	6.4	6.4	6.4	6.4	6.4	7.5	8.7

Analyst Certification

I, Ben Haynor, CFA, certify that the views expressed in this research report accurately reflect my personal views about the subject company and its securities. I also certify that I have not been, am not, and will not be receiving direct or indirect compensation related to the specific recommendations expressed in this report.

Important Disclosures:

The analyst or a member of his/her household does not hold a long or short position, options, warrants, rights or futures of this security in their personal account(s).

As of the end of the month preceding the date of publication of this report, Feltl and Company did not beneficially own 1% or more of any class of common equity securities of the subject company.

There is not any actual material conflict of interest that either the analyst or Feltl and Company is aware of.

The analyst has not received any compensation for any investment banking business with this company in the past twelve months and does not expect to receive any in the next three months.

Feltl and Company has been engaged for investment banking services with the subject company during the past twelve months and does anticipate receiving compensation for such services in the next three months.

Feltl and Company has not served as a broker, either as agent or principal, buying back stock for the subject company's account as part of the company's authorized stock buy-back program in the last twelve months.

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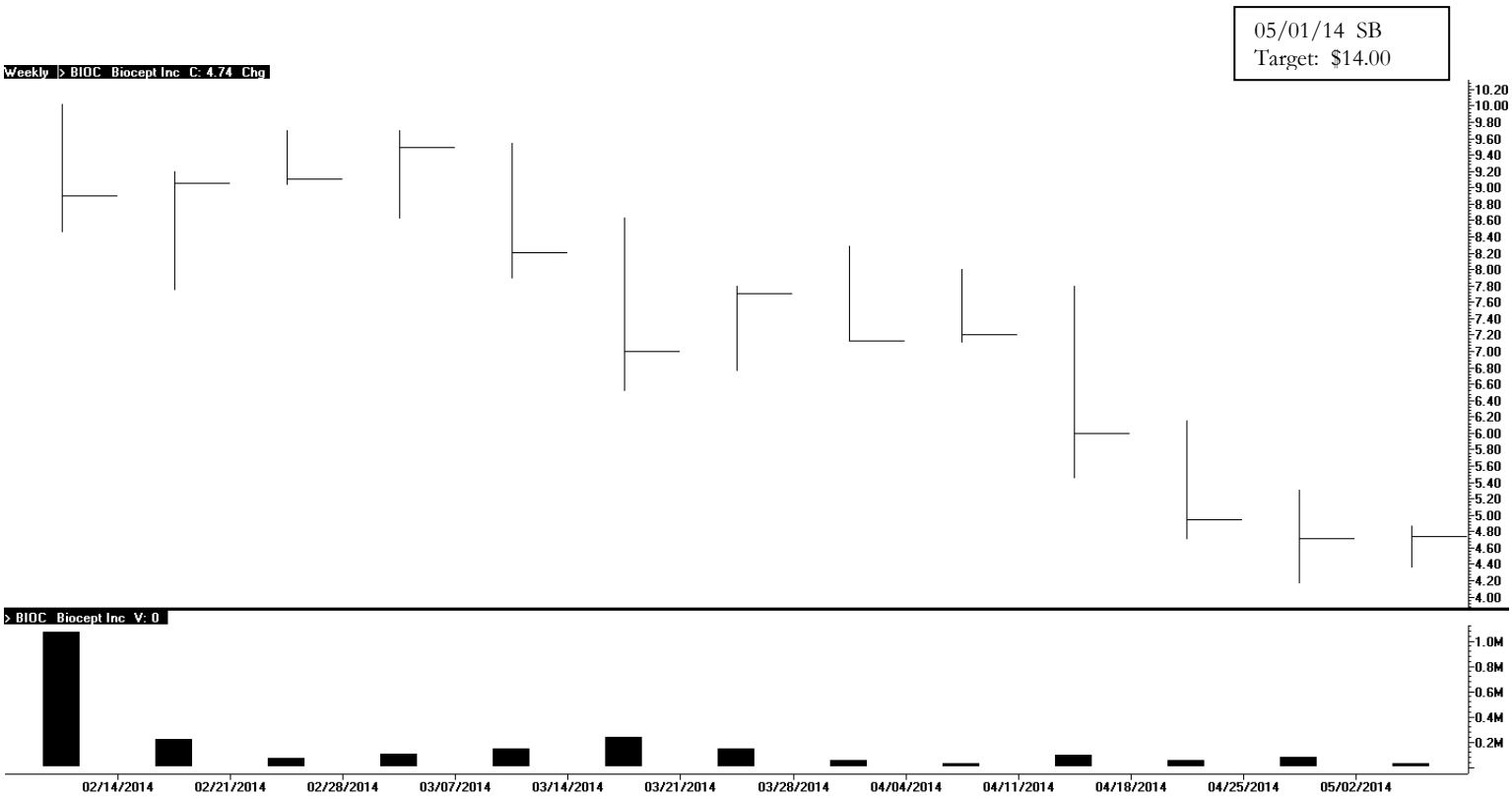
Strong Buy: The stock is expected to have total return potential of at least 20%. Catalysts exist to generate higher valuations, and positions should be initiated at current levels.
Buy: The stock is expected to have total return potential of at least 10%. Near term catalysts may not exist and the common stock needs further time to develop. Investors requiring time to build positions may consider current levels attractive.
Hold: The stock is expected to have total return potential between positive 10% and negative 10%. Fundamental events are not present to make it either a Buy or a Sell. The stock is an acceptable longer-term holding.
Sell: Expect a negative total return of at least 10%. Current positions may be used as a source of funds.

5/1/2014

Ratings Distribution for Feltl and Company

			------ Investment Banking ------	
Rating	Number of Stocks	Percent of Total	Number of Stocks	Percent of Rating category
SB/Buy	48	64%	9	19%
Hold	24	33%	0	0%
Sell	2	3%	0	0%
	74	100%	9	12%

The above represents our ratings distribution on the stocks in the Feltl and Company research universe, together with the number in (and percentage of) each category for which Feltl and Company provided investment-banking services in the previous twelve months.



Date	Nature of Report	Rating	Price Target
05/01/14	Initiation@4.74	StrongBuy	$14.00

Feltl and Company does make a market in the subject security at the date of publication of this report. As a market maker, Feltl and Company could act as principal or agent with respect to the purchase or sale of those securities.

Valuation and Price Target Methodology:

Our valuation is based upon an EV/sales methodology. We have chosen 3.5x 2016 EV/sales as the multiple on which to value Biocept based upon comparable companies at this point in the company's development. Based on our 2016 estimates, discounted back to 2015 at a rate of 25%, this results in a market value of ~$14.00 per share based upon 6.4 million shares expected to be outstanding at this point next year.

Risks to Achievement of Estimates and Price Target:

Additional funding likely needed. Biocept raised net proceeds of $16.7 million in their recent IPO. The company will likely need to raise additional capital to execute on its plan and fulfill other obligations. We believe the company is most likely to raise additional equity funding, although we cannot rule out non-dilutive funding in the form of a partnership or license agreement. They may also be able to raise capital via a line of credit or debt financing, although we view this as unlikely. If the company chooses to raise funds via an equity offering, which we would consider the most likely option, the raise has the potential to put pressure on the share price.

Biocept has not achieved significant revenue to date. In both 2012 and 2013, Biocept generated just $0.1 million in revenue. That said, they have not previously had a field sales force. At present, the company has begun building out its sales force, but time-to-productivity for salespeople in the oncology area is usually at least six months.

Requires a behavior change amongst practitioners. The oncology market has long sent off tissue samples to diagnostic laboratories, and behaviors in the medical community can be highly reluctant to change. As such, adoption can be slower than expected for new technologies in medicine; in fact, studies have shown it takes nearly a decade and a half for half of practitioners to adopt a new way of treatment after a major landmark study. In many cancers, it is still in the early innings of the adoption of genomic characterization, although recent FDA approvals of molecularly targeted oncology therapies is likely to increase adoption of molecular diagnostics overall. Despite this, oncologists would need to change their tissue biopsy habits to move to a liquid biopsy, something that may not occur quickly or easily.

Pipeline does not come to fruition. While Biocept believes they have made solid progress towards validation of their pipeline, unforeseen developments can always occur. Based upon other approaches available and validated for capturing CTCs and our belief Biocept's approach has advantages over competing approaches, we believe the company's pipeline will be validated, but there can be no guarantee.

Competitive CTC capture approaches in development or launched, uncertainty on which will capture mind-share. A number of other approaches are being attempted, but it is unclear which ones will ultimately be the winners. Certainly, we have seen cases where better diagnostic technology failed to gain traction in situations where inferior competitors reached market sooner, or similar technological approaches developed by firms with deeper pockets and larger sales forces won out. Please see the "Competition" section that follows for further discussion of competing approaches.

Please review the company's SEC filing for a comprehensive discussion of potential risks.

Other Disclosures:

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