

biotechne®

Exosome Diagnostics & Quad Technologies

JUNE 2018

Disclaimer

Cautionary Statements

This presentation contains “forward-looking statements” within the meaning of the federal securities laws. Except for historical information contained herein, the statements in this presentation are forward-looking and made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements made herein relate to, among other things, future sales, earnings, return on equity, cost savings, process improvements, free cash flow, share repurchases, capital expenditures, acquisitions, benefits of investments and partnerships, business strategies and other matters. Such statements can be identified by words such as: “expected,” “expects,” “expect,” “forecast,” “would,” “estimate,” “will,” or similar references to future periods.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Actual results could differ materially from those stated or implied in the forward-looking statements. For a list of factors, risks and uncertainties which could make our actual results differ from expected results, please see our latest Annual Report on Form 10-K. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, as a result of new information, future developments or otherwise.

This presentation also contains non-GAAP financial information. Management uses this information in its internal analysis of results and believes this information may be informative to investors in gauging the quality of our financial performance, identifying trends in our results and providing meaningful period-to-period comparisons. For definitions of applicable non-GAAP financial measures and reconciliations of non-GAAP financial information to GAAP financial information, see the Reconciliations of GAAP to Non-GAAP Financial Measures included in the Company’s financial reports on Forms 10-Q and 10-K and related press releases.

biotechne®

At a Glance:

President and CEO: **Chuck Kummeth**

Headquarters: **Minneapolis, MN**

Number of Employees: **+2,000**

FY2017 Revenues: **\$563 million**

NASDAQ: **TECH**

Market Cap: **\$6.1B**

Market Profile:

Leader in:

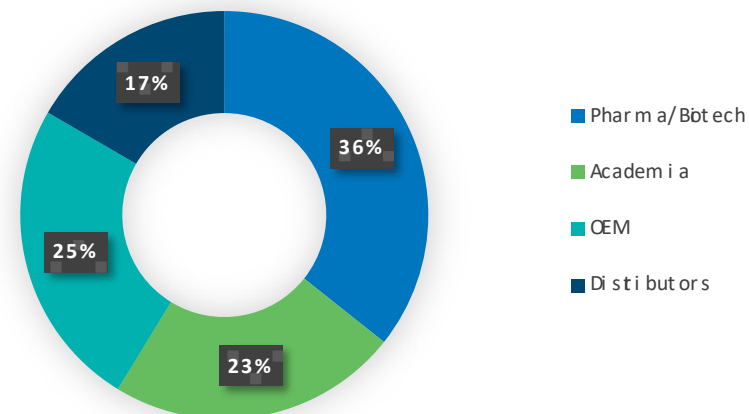
- Life Science Consumables Market
- Automated Protein Analysis Solutions
- Controls & Calibrators for IVD Assays
- Molecular Anatomic Pathology and Dx

Addressable Market Size: ~\$5-10 billion

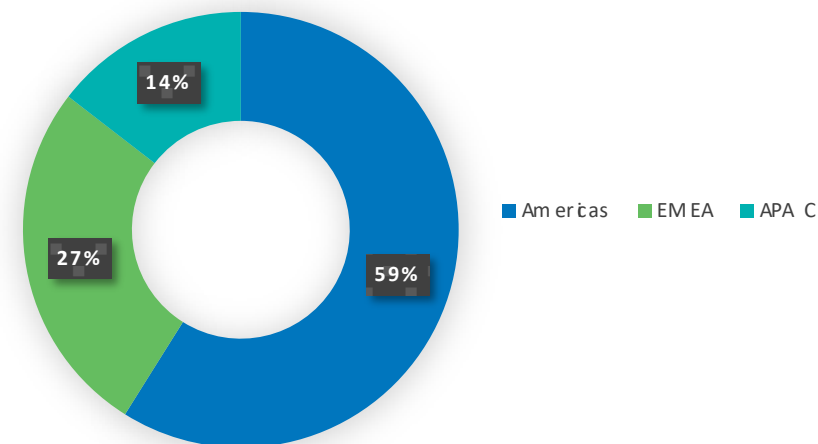
Key Product Lines and Workstreams:

- Biological Content
- Automated Western Blot
- Single and Multiplex ImmunoAssays
- RNA-ISH Molecular Diagnostics
- Molecular Dx

Revenue by Customer Segmentation



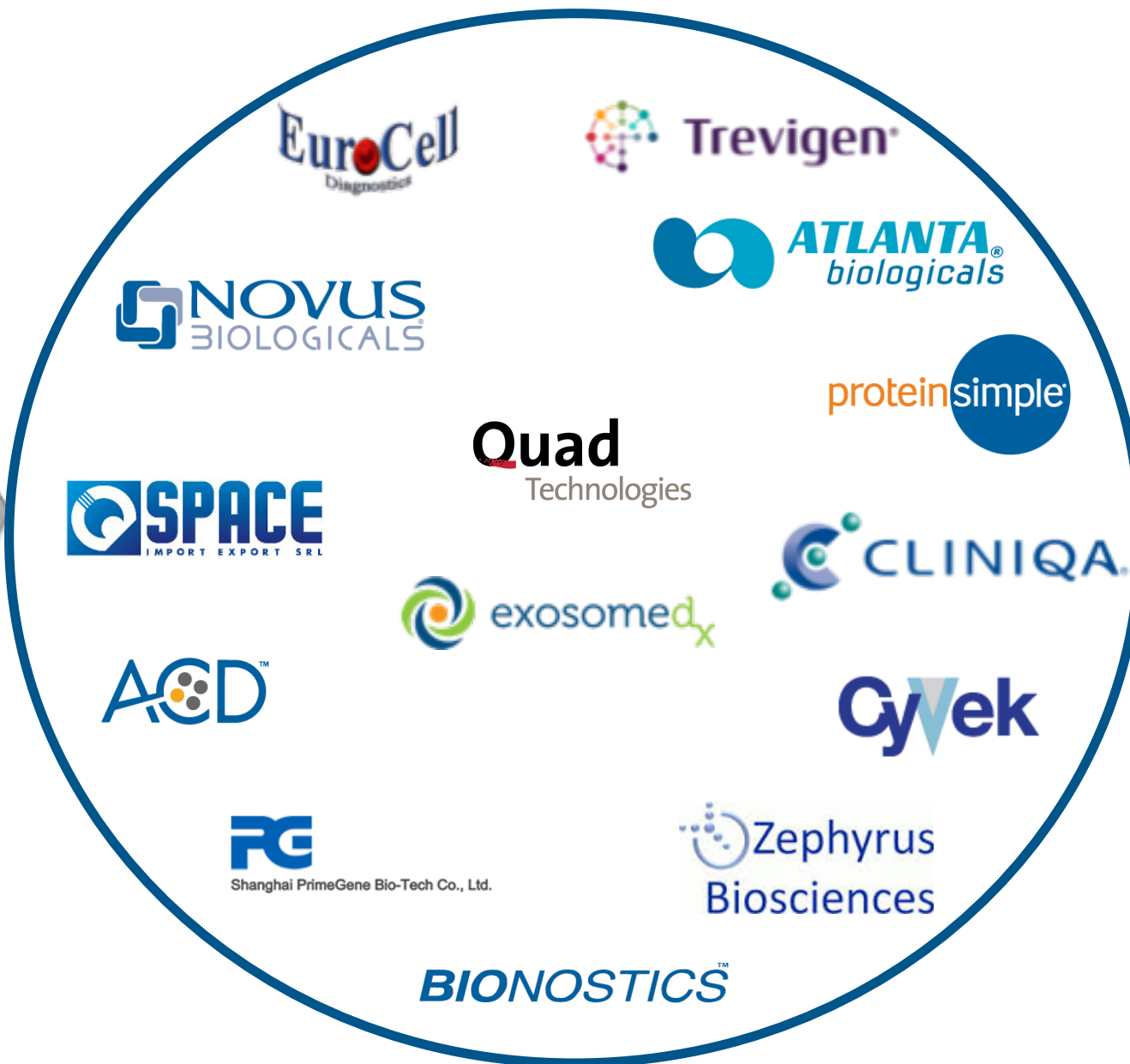
Revenue by Geography

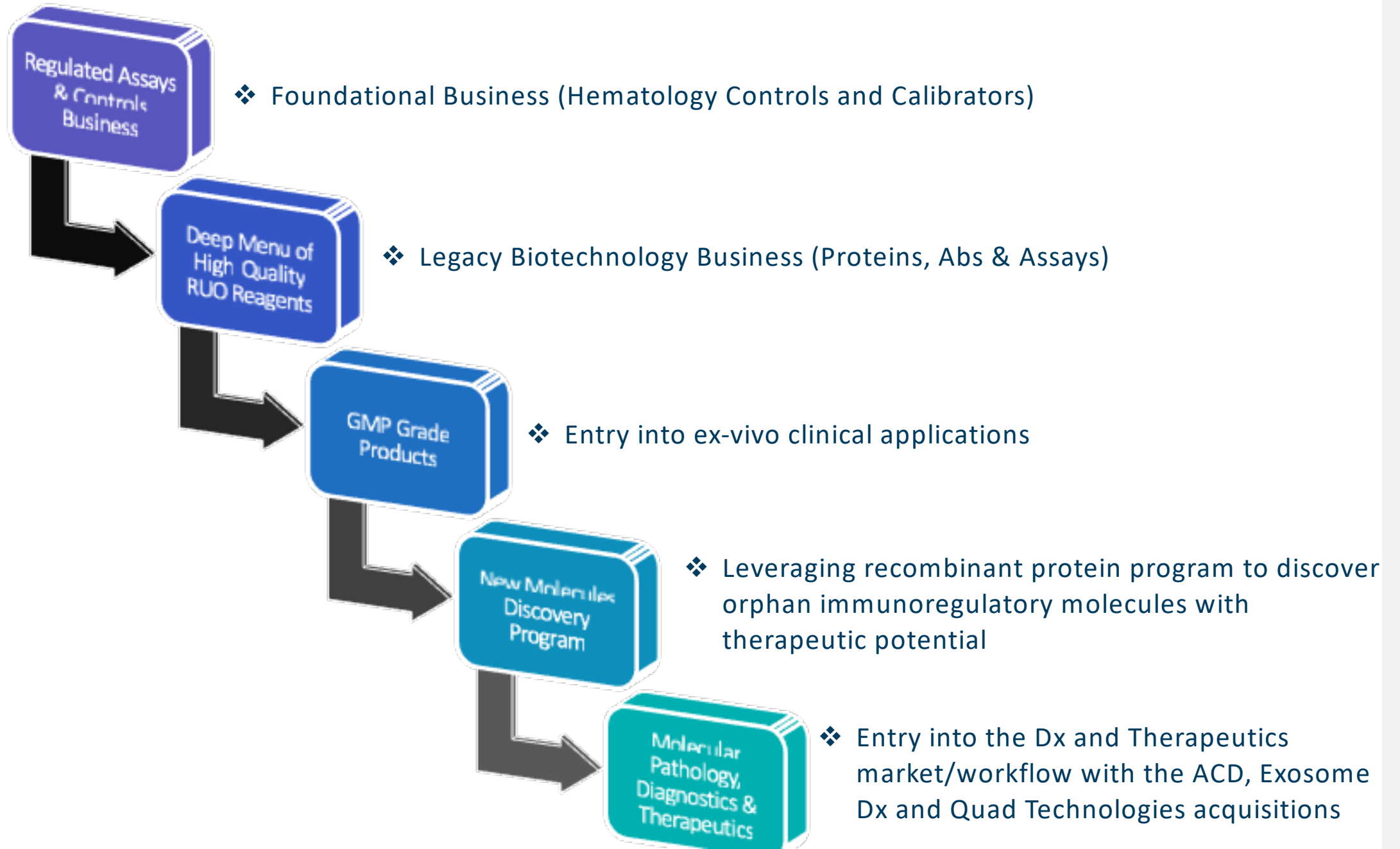


NASDAQ
TECH

biotechne®

- Healthy hopper of targets
- Sound prioritization strategy
- Targets that fill gaps
- Targets with ROIC > WACC

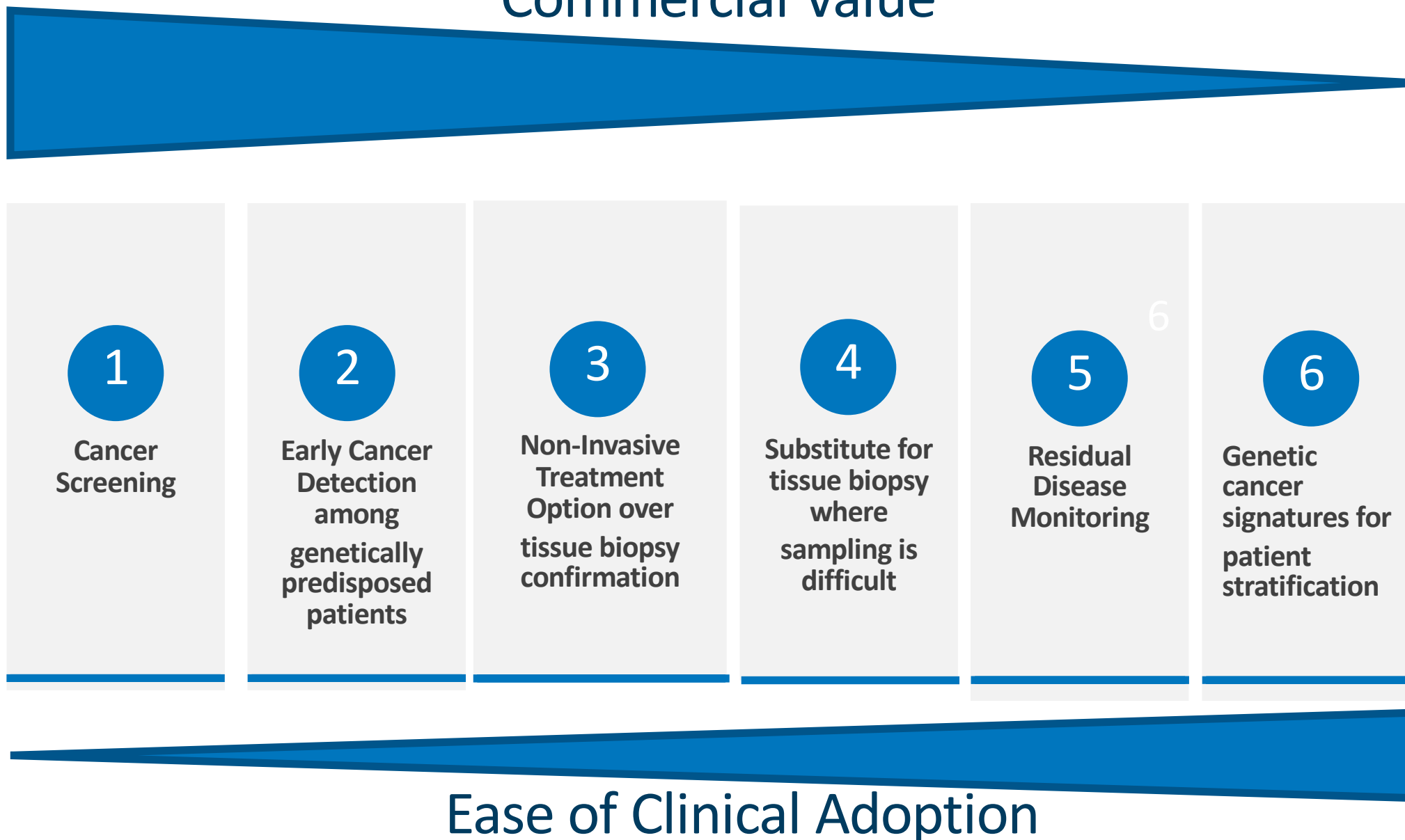




EXOSOME DIAGNOSTICS

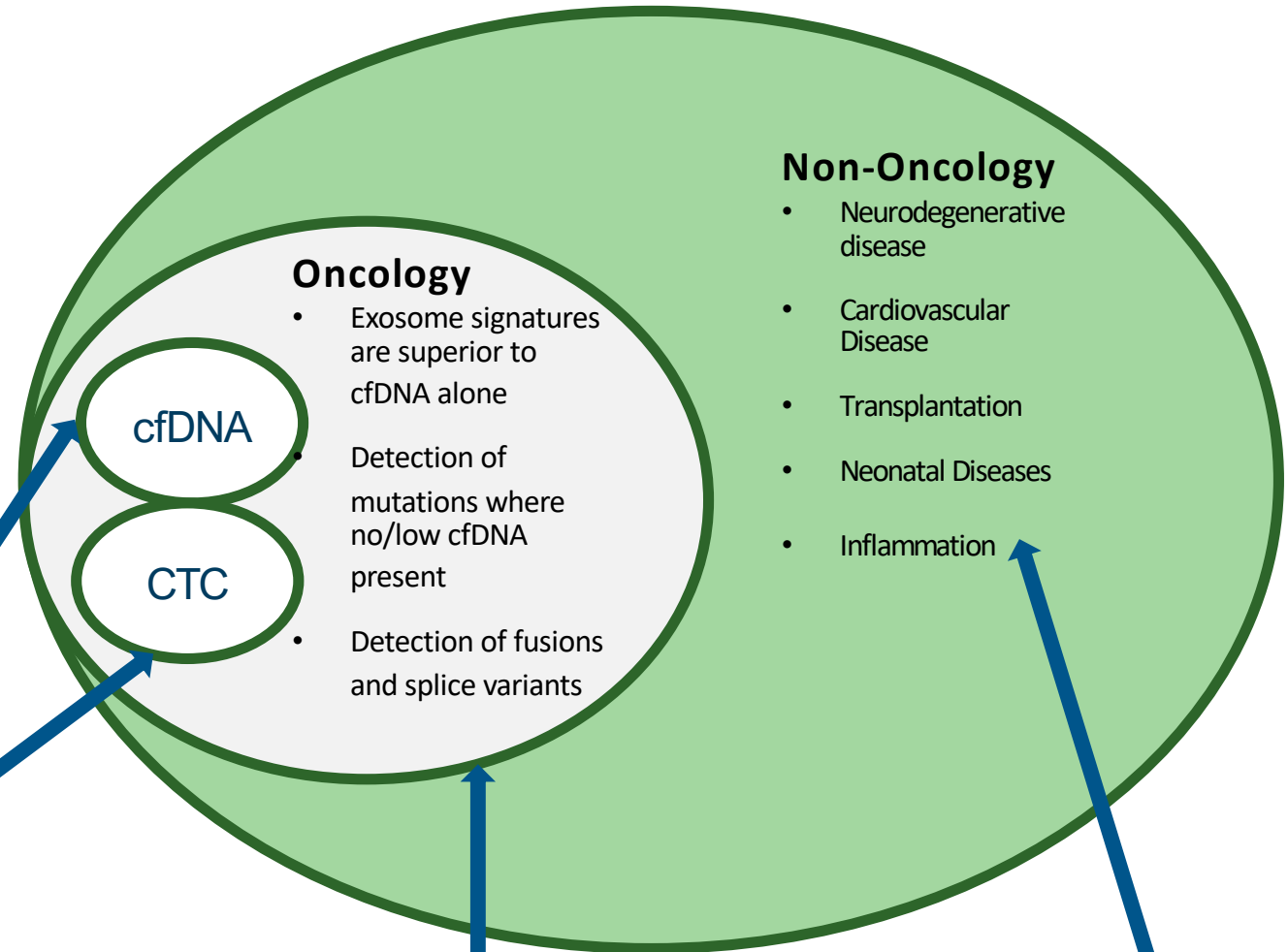


Commercial Value



Estimated Liquid Biopsy Market Size: \$4.5 billion by 2020

- ❖ CTC & cfDNA Liquid Biopsy:
 - ❖ Crowded space
 - ❖ Quality of DNA questionable
 - ❖ Source of DNA unknown
- ❖ Exosome-based technology:
 - ❖ Patent protected
 - ❖ High quality of RNA & DNA
 - ❖ Source of exosomes defined by immunophenotypic properties of cells of origin



cfDNA and CTC are limited to late stage disease

Exosomes-based platform enables early detection

RNA profiling opens up non-oncology applications

Company Overview

- Exosome Diagnostics is a leading developer of biofluid-based diagnostics for precision healthcare
 - Launched the industry's first RNA-based exosome derived liquid biopsy, ExoDx Prostate IntelliScore ("EPI"), a urine-based liquid biopsy test to predict high grade prostate cancer
- Markets the EPI test through a 15-person sales force in the U.S. and has over 70 employees
- Founded in 2008, Exosome Dx is headquartered in Waltham, Massachusetts, with European headquarters located in Martinsried Germany

Product Offerings

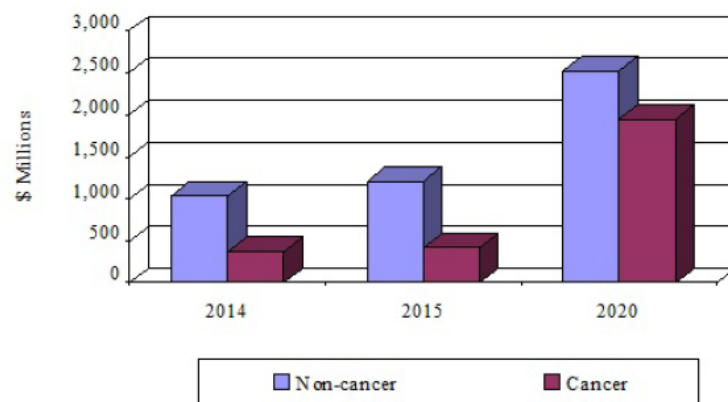
- Offers the ExoDx Prostate IntelliScore, a non-invasive urine-based laboratory developed test for prostate cancer, that was launched in September 2016
 - Provides clinicians with necessary information on the aggressiveness of the prostate cancer to determine the best treatment and avoid unnecessary biopsies
 - Reimbursement momentum with 110 million covered lives in the U.S.
- Pipeline includes additional liquid biopsies in oncology and additional disease areas, sophisticated companion diagnostics and an exosomal protein detection system

Proprietary Technology

- Developed a novel exosome-focused technology platform for the liquid biopsy market
 - The technology provides gene expression results from both exosomes as well as cfDNA comparable to data that can be derived via traditional tissue biopsy of pathological tissue
 - Enrichment of exosomes can provide diagnostic insights of disease in distant organs
 - Quality of nucleic acids isolated from exosomes improves the quality of the results that are generated

Liquid Biopsy Global Market Size

Estimated to reach \$4.5 billion by 2020



Source: BBRC 2016 Report

Current Prostate Cancer Prognostic Diagnostics Market

Global Prostate Cancer Dx Market for all types of Dx tests is estimated at \$3.3 Billion

Figures in millions of US\$

Rev Opportunity (\$MM)	Low/Very Low Risk	Favorable Intermediate	Remainder	Total	%
Total Medicare	\$199	\$99	\$99	\$398	56.9%
Commercial & Other	\$151	\$75	\$75	\$301	43.1%
US Opportunity	\$350	\$175	\$175	\$699	100.0%
International	\$1,301	\$650	\$650	\$2,601	
Global	\$1,650	\$825	\$825	\$3,300	
% of Total	50.0%	25.0%	25.0%		

Source: Barclays Research Report-2017

FIRST MOLECULAR TEST TO PREDICT HIGH-GRADE PROSTATE CANCER AT INITIAL BIOPSY

Unparalleled Performance

- Three biomarker gene expression tests to identify aggressiveness of cancer
- 34% Specificity, **92% Sensitivity** (EPI is a “rule-out” test, hence Sensitivity is key)

Non-Invasive

- Simple urine catch with no digital rectal exam requirement
- Eliminates biopsy related complications

Extensive Clinical Validation

- Accurately identified the presence of aggressive prostate cancer patients in a multi-center 1,500 patient trial
- Results published in JAMA Oncol. 2(7):882, 2016

Easy to Interpret Results

- Significantly improves decision making with “Yes/No” answer-no second gray zone
- Scoring corresponds to the Gleason Score used to grade cancer cells in biopsied tissue

Seamless Workflow Integration

- Easily integrated into clinical workflow improving patient comfort and compliance
- Report format facilitates clinician-patient consultation

Highly Favorable Economics

- Accelerated reimbursement path leverages both public and private payor models
- Price of \$760 delivers double digit return to payors and high gross margins to ExoDx

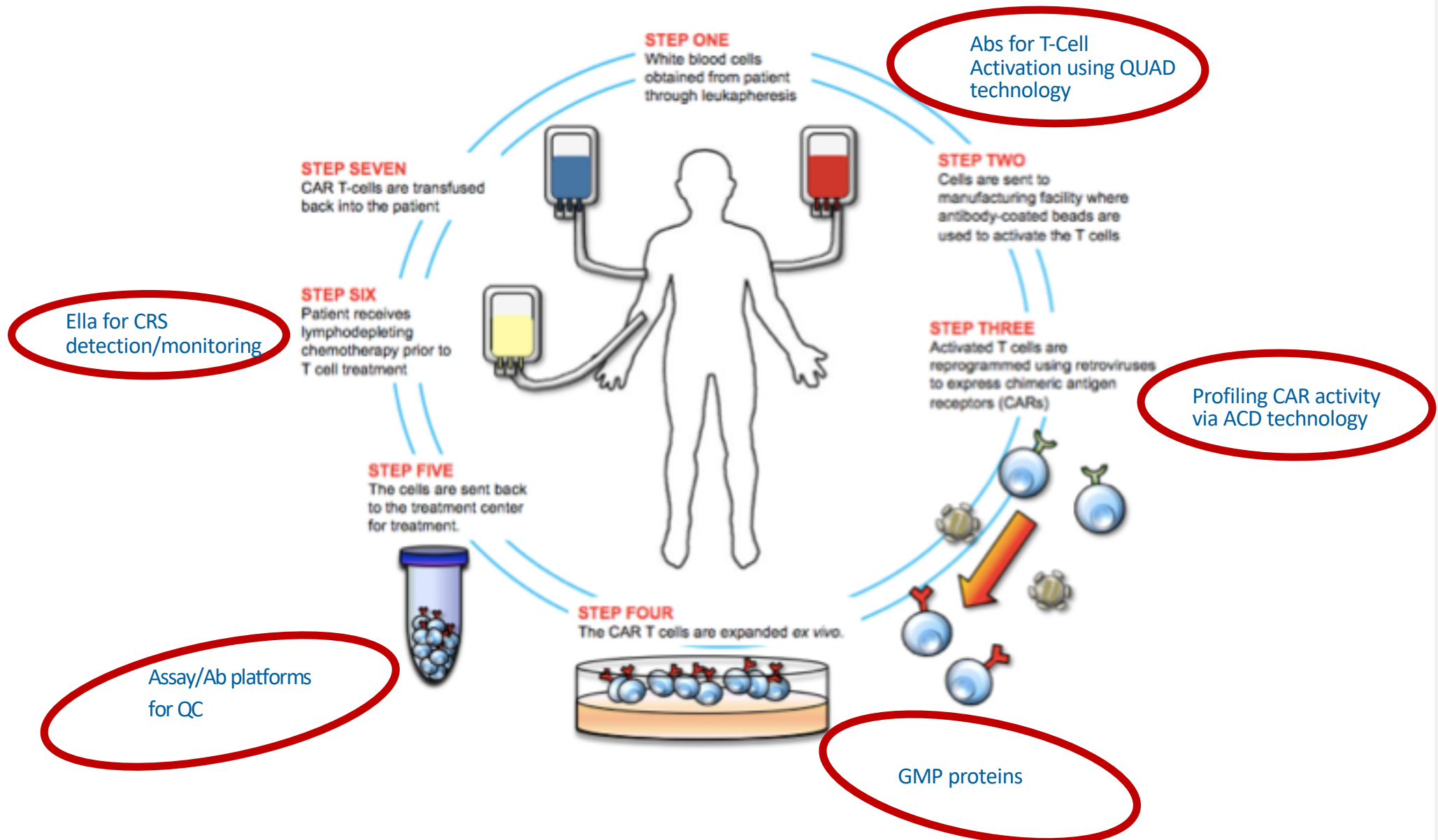
IntelliScore Below Cut-Point
DECREASED likelihood of high-grade prostate cancer
(Gleason score ≤ 6)

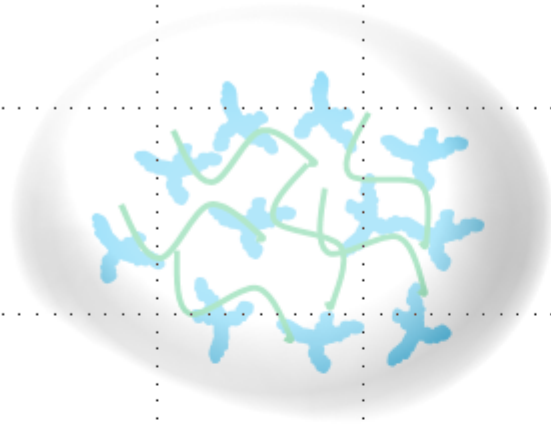
IntelliScore Above Cut-Point
INCREASED likelihood of high-grade prostate cancer
(Gleason score ≥ 7)

- ☐ Coverage of EPI Test Milestones
 - ☐ CPT PLA Code (May 2017) ✓
 - ☐ CareFirst Agreement (June 2017)- *Evidence-based study-BCBS* ✓
 - ☐ Medicare Price Decision (November 2017)- *PAMA price effective through 2020* ✓
 - ☐ Working through process to get NGS decision (NCCN) for Local Coverage Determination
- ☐ US EPI Test Population by Coverage Type
 - ☐ 50% Medicare
 - ☐ 33% Private Payor
 - ☐ 12% Medicaid and Government Programs
 - ☐ 5% Self-pay
- ☐ Reimbursement momentum with over 110 Million covered lives in the US
(*BCBS-CareFirst, Multiplan, FedMed, America's Choice, Baylor, Scott & White, Medicaid, etc.*)

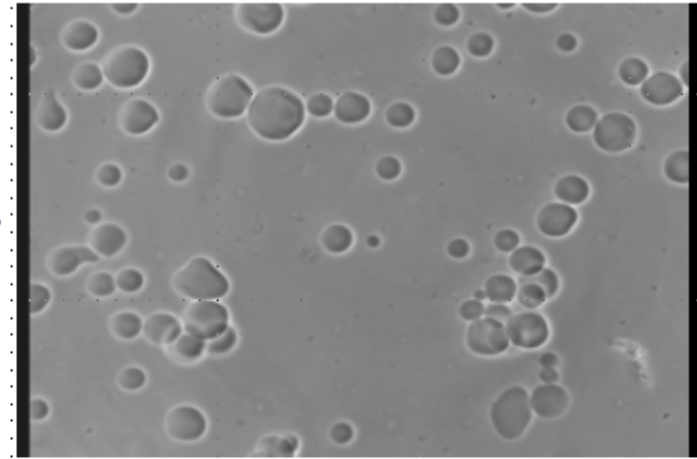
QUAD TECHNOLOGIES

Quad
Technologies



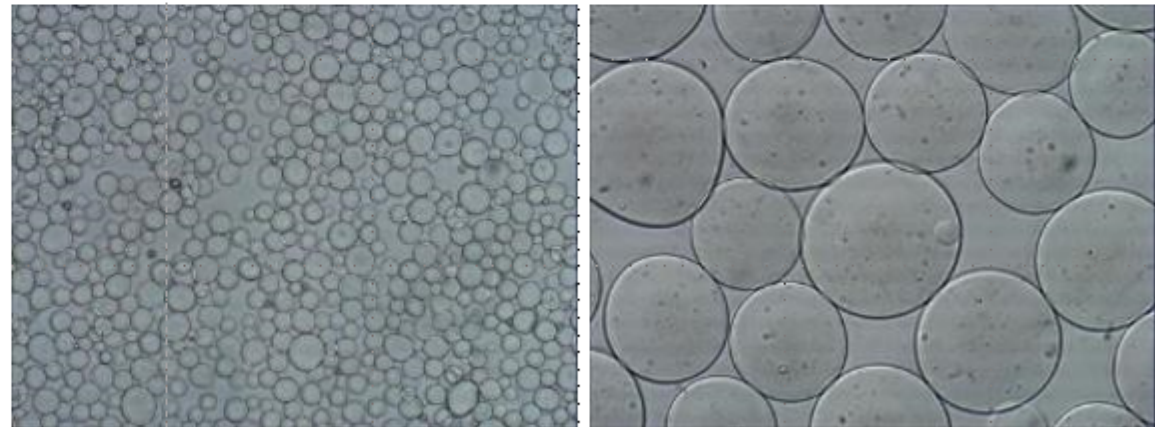
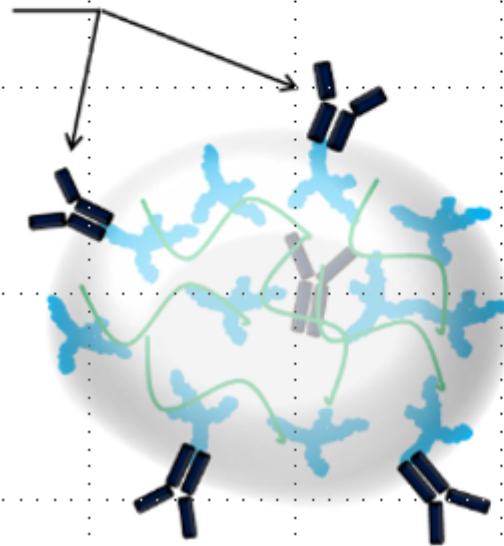


**Release Buffer
<5 seconds**



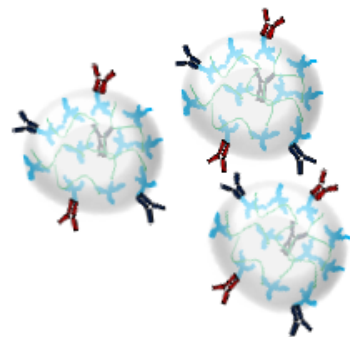
QuickGel microbeads can be created with specific binding functions

Directly-
conjugated
antibodies

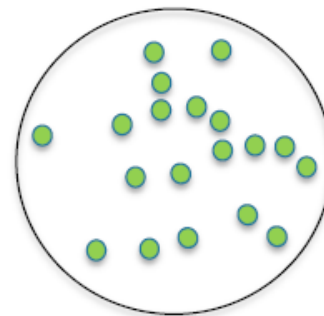
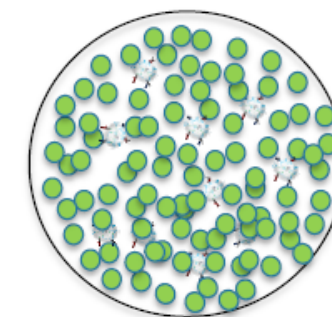
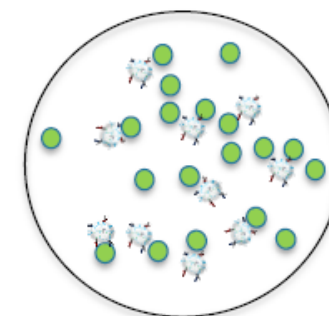


QuickGel Microbeads can be made to specific sizes
in ranges $\sim 5 \mu\text{m}$ – $500 \mu\text{m}$ diameter

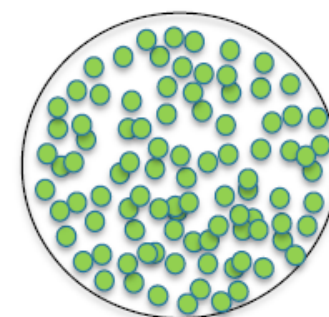
CD3/CD28 Cloudz



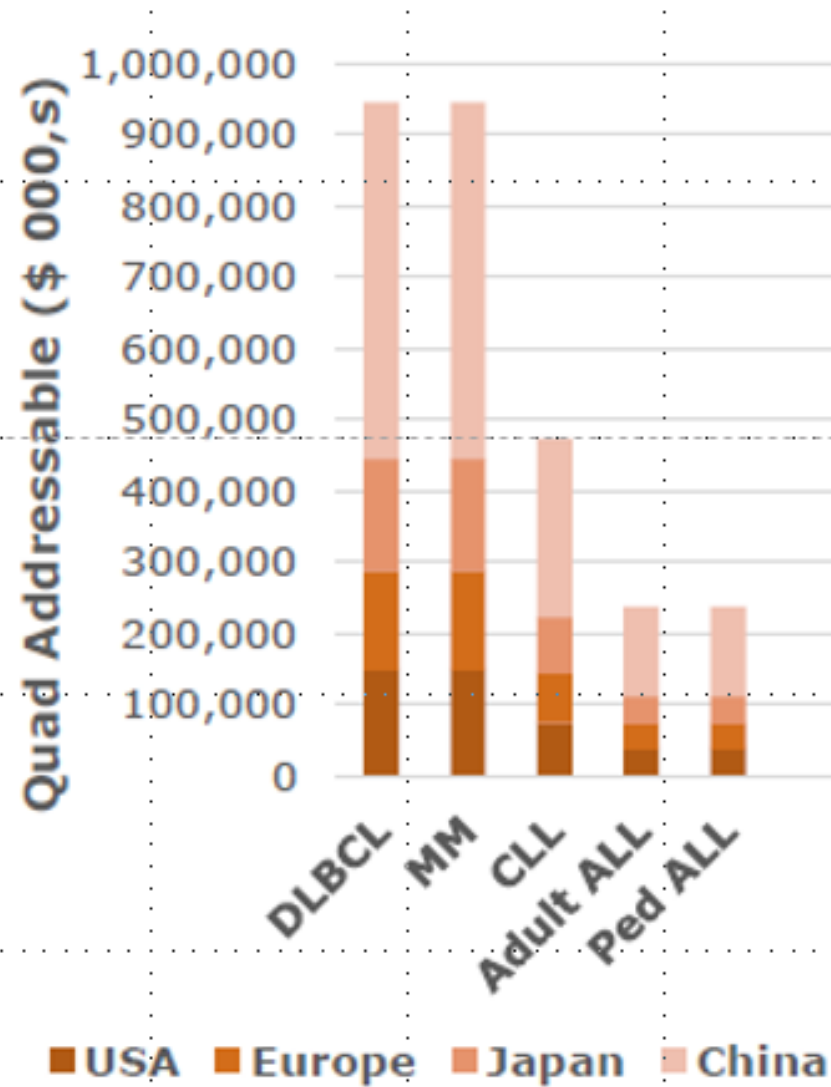
T Cells or PBMC

Cloudz/Cell
Complex

T Cell Expansion

Add Release
BufferCloudz dissolve
<5 secReleasable
microsphere-free
T Cells

Downstream Applications



- Quickgel technology can address both:
 - Cell Selection
 - Cell Activation

bio-techne®**Quad**
Technologies**Bio-Techne**

- Continued refocusing of business into more clinical workflow
- Both organic and inorganic activities

**Exosome
Diagnostics**

- Patent protected nucleic acid diagnostic test platform using exosomes
- Opportunity for Bio-Techne to participate in the non-invasive liquid biopsy market

**Quad
Technologies**

- Novel technology to improve the CAR-T manufacturing process
- Opportunity for Bio-Techne to expand further into the cell therapy market

RESEARCH

DIAGNOSTICS

THERAPIES

Strategy:

THANK YOU

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