MabVax therapeutics

Developing Unique Human Monoclonal Antibody-Based Products for Difficult to Treat Cancers

Virtual Investor Conference

May 3, 2018

NASDAQ: MBVX

www.mabvax.com

Forward Looking Statements

This presentation contains forward-looking statements and projections. The company makes no express or implied representation or warranty as to the completeness of this information or, in the case of the projections, as to their attainability or the accuracy and completeness of the assumptions from which they are derived, and it is expected that each prospective investor will pursue his, her, or its own independent investigation. It must be recognized that estimates of the company's performance are necessarily subject to a high degree of uncertainty and may vary materially from actual results. In particular, this presentation contains statements, including without limitation the projections, that constitute "forward-looking statements" within the meaning of the private securities litigation reform act of 1995. These statements appear in a number of places in this presentation and include, but are not limited to, statements regarding the company's plans, intentions, beliefs, expectations and assumptions, as well as other statements that are not necessarily historical facts. The company commonly uses words in this presentation such as "anticipates," "believes," "plans," "expects," "future," "intends," and similar expressions to identify forward-looking statements and projections. You are cautioned that these forward-looking statements and projections are not guarantees of future performance and involve risks and uncertainties. The company's actual results may differ materially from those in the forward-looking statements and projections due to various factors, including competition, market factors, general economic conditions and those described in the "risk factors" section. The information contained in this presentation describes several, but not necessarily all, important factors that could cause these differences.

Unique Human Antibody Discovery and Development Platform Resulting In Clinical Pipeline

Corporate

- Clinical stage biotech focused on discovery and early development of therapeutic and diagnostic antibody based products
- Products intended to treat particularly difficult cancers
- Experienced senior team and resources for execution of entire development effort through Phase II
- CAR-T research agreement with MSKCC utilizing antibody binding domains

Platform

- Human antibody discovery platform has yielded multiple antibody development opportunities
- Highly tumor specific antibodies rescued from the immune response of vaccinated cancer patients
- Focus on a particular type of cancer target - abnormal carbohydrate targets upregulated on solid tumor cancers
- Antibodies we develop are ideal targeting vehicles for antibody based therapeutics and diagnostics

Pipeline

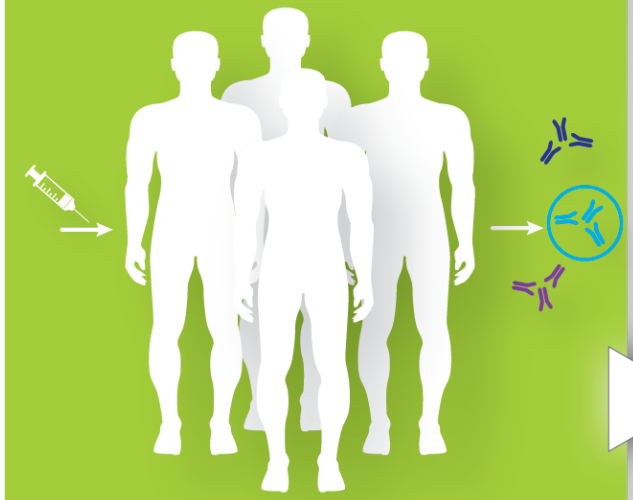
- Synergistic product development strategy
- Lead 5B1 antibody clinical development program has enrolled 56 patients in three Phase 1 clinical trials
  - MVT-5873 Therapeutic antibody
  - MVT-2163 PET diagnostic
  - MVT-1075 RIT
- Follow-on HuMab anti-Tn antibody targets breast and ovarian cancer

DISCOVERY PLATFORM

Human Antibody (HuMab) Discovery Platform

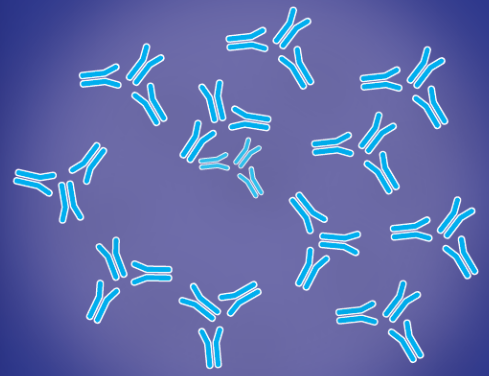
Proprietary Approach to the Discovery and Development of Novel Fully Human Antibodies for Therapeutic and Diagnostic Agents

Focused Discovery



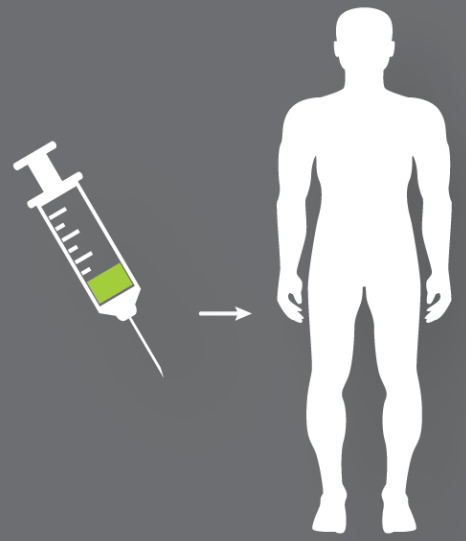
Vaccinated Cancer Patients

Screening



Identify Optimal Antibody from Multiple Responders

Optimized Therapy



Fully human antibody minimizes immunogenicity. Binding sequence reflects the patient's immune system response to the target antigen

Pipeline

Program	Discovery	Lead Op	Pre-IND	Phase 1	Phase 2
HuMab-5B1 for Pancreatic Cancer and CA19-9 malignancies including Lung and GI Cancers					
Therapeutic (MVT-5873): + Chemo	First Line Pancreatic Cancer Therapeutic				
Therapeutic (MVT-5873): Monotherapy	Dose Finding to Support RIT and PET				
Radioimmunotherapy (RIT) (MVT-1075)	Metastatic Pancreatic and Lung Cancer Therapeutic				
ImmunoPET Imaging (MVT-2163)	Diagnostic for Pre-surgical Assessment				
Tn for Breast and Ovarian Cancer					
HuMab-Tn	Ovarian and Triple Negative Breast Cancer				
CAR-T Programs - Utilize MabVax's Binding Domains					
CAR-T-Sialyl Lewis[a]	Pancreatic and GI				
CAR-T-GD2	Neuro/ Endocrine				

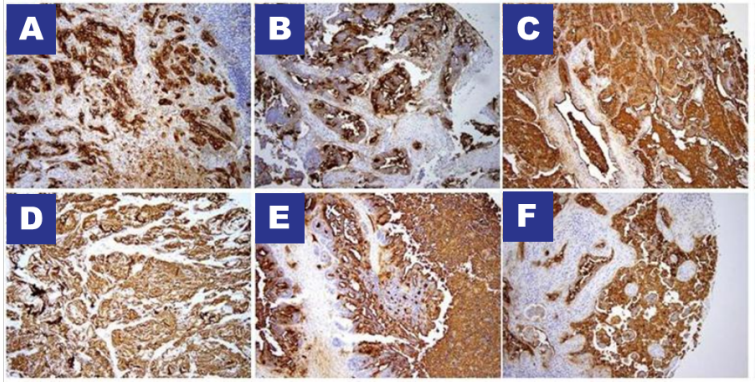
HuMab-5B1 PRECLINICAL DEVELOPMENT PROGRAM

Scientific Rationale and Development Strategy

The 5B1 Target Is Valuable Because It Is Widely and Preferentially Expressed In Cancer

- The HuMab-5B1 target, is expressed in over 90% of pancreatic and a large percentage of GI and lung cancers
- Not expressed in normal tissues
- Plays key role in tumor proliferation and metastasis
- Target is also the epitope on an important serum tumor marker called CA19-9
- CA19-9 is validated diagnostic test and considered a valuable adjunct in the diagnosis and monitoring of treatment of pancreatic cancer

- Target is densely expressed in millions of copy numbers on many target tumors



A. Pancreatic; B. Colon; C. Lung; D. Bladder; E. Ovarian; F. Breast

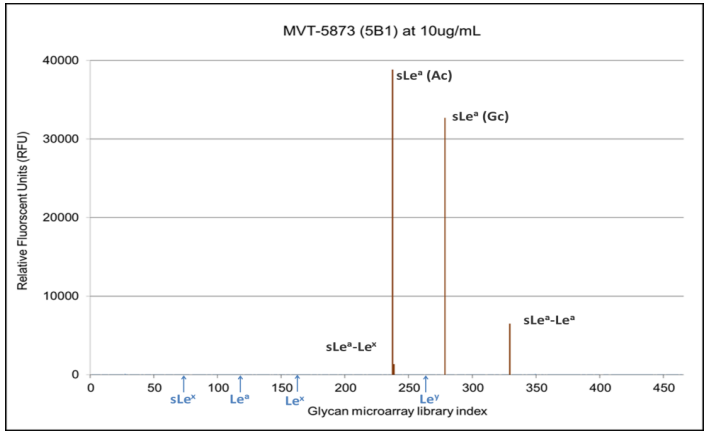
CA19-9 detection in patients [1]

Tumor type	Positivity (%)
Pancreas	92
Stomach	37
Endometrium	36
Uterus	30
Colon/rectum	29
Breast	24
Ovary	15
Other	3

1: Passerini, R. *et al*, *J Clin Pathol* 2012:138 (2): 281-7

- HuMab-5B1 antibody is internalized into cancer cells and accumulates into target cancer cells
- HuMab-5B1 is specific only to the sLe^a target
- Confirmed by the third party academic Consortium for Functional Glycomics glycan array
- 100,000 patients with metastatic disease and poor prognosis could be eligible for treatment

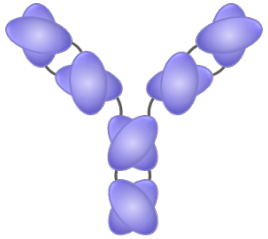
[1]Consortium for Functional Glycomics



Integrated & Efficient Development Strategy

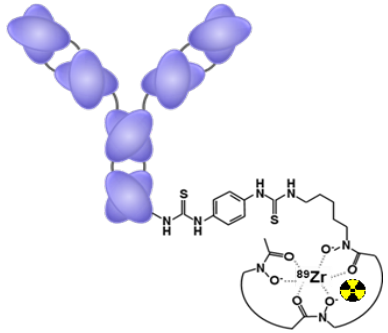
Antibody-Based Therapeutic Agent to Treat Very Difficult to Treat Cancers Such as Pancreatic, Small Cell Lung, Gastric and Colon

Completed Phase 1a
Established Safety, PK and Responder Subset



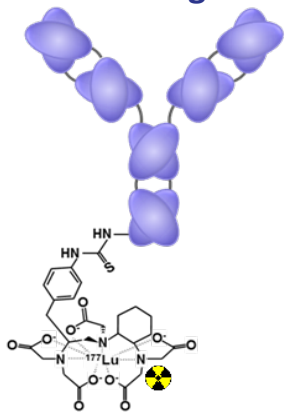
Therapeutic Antibody (MVT-5873)

Completed Phase 1a
Established safety, specificity, accumulation on tumor, and dose strategy for RIT



Immuno-PET Imaging (MVT-2163)

- **Potent antibody directed radioimmunotherapy conjugate in Phase 1, producing localized tumor cell killing**



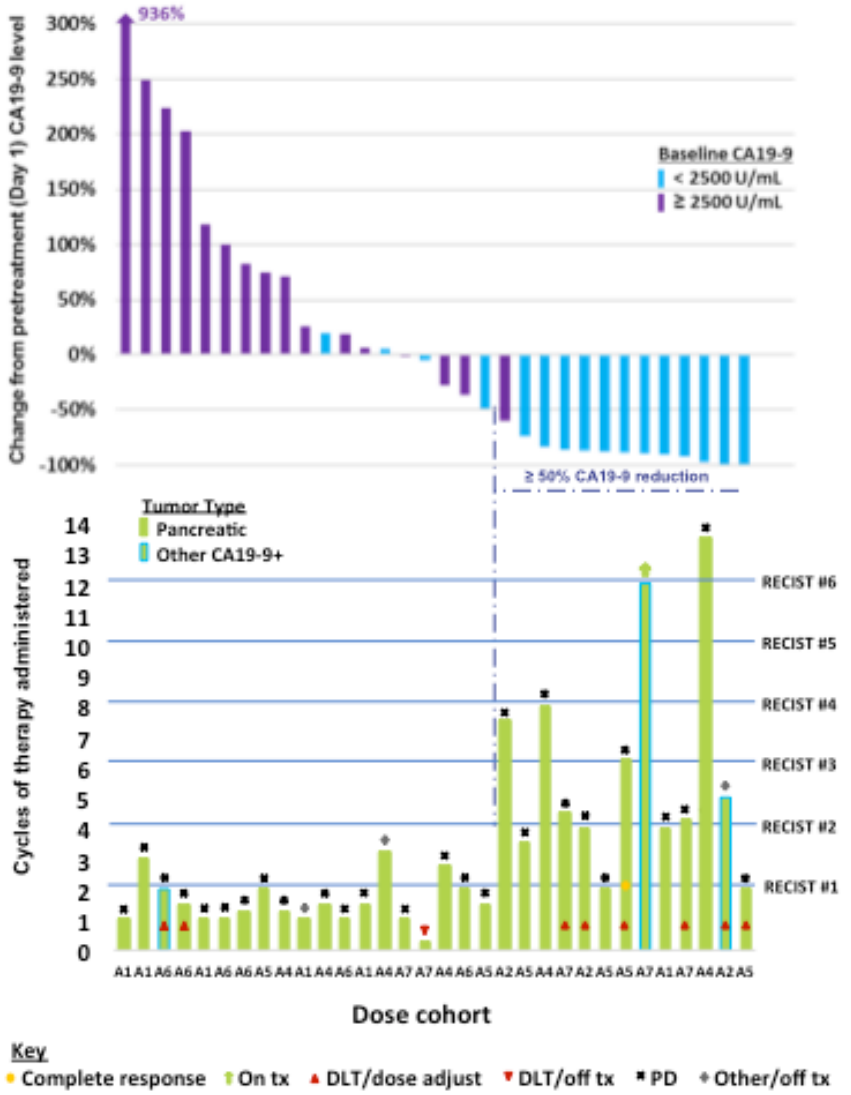
Radioimmunotherapy (MVT-1075)

HuMab-5B1 PHASE 1 PROGRAMS

MVT-5873 Therapeutic Antibody Establishes Safety and MTD

Single Agent Monotherapy Phase 1a Trial Data Demonstrates Anti-Cancer Effect

- Study conducted in stage 3 and 4 PDAC patients who have failed all other therapies and have progressive disease
- Maximum Tolerated Dose (MTD) established
- Identified subset (n=13 or 41%) with ≥50% reduction in CA19-9 biomarker levels after treatment that remained on treatment 5.9 mo on average (vs 1.6 mo, for those ≤50% reduction)
- Persistent response (SD) group (≥ 6 cycles) (n=5 or 16%) remained on treatment 9.5 mo, on average
- What we learned from this trial allowed us to move forward with a combination with first line chemotherapy trial

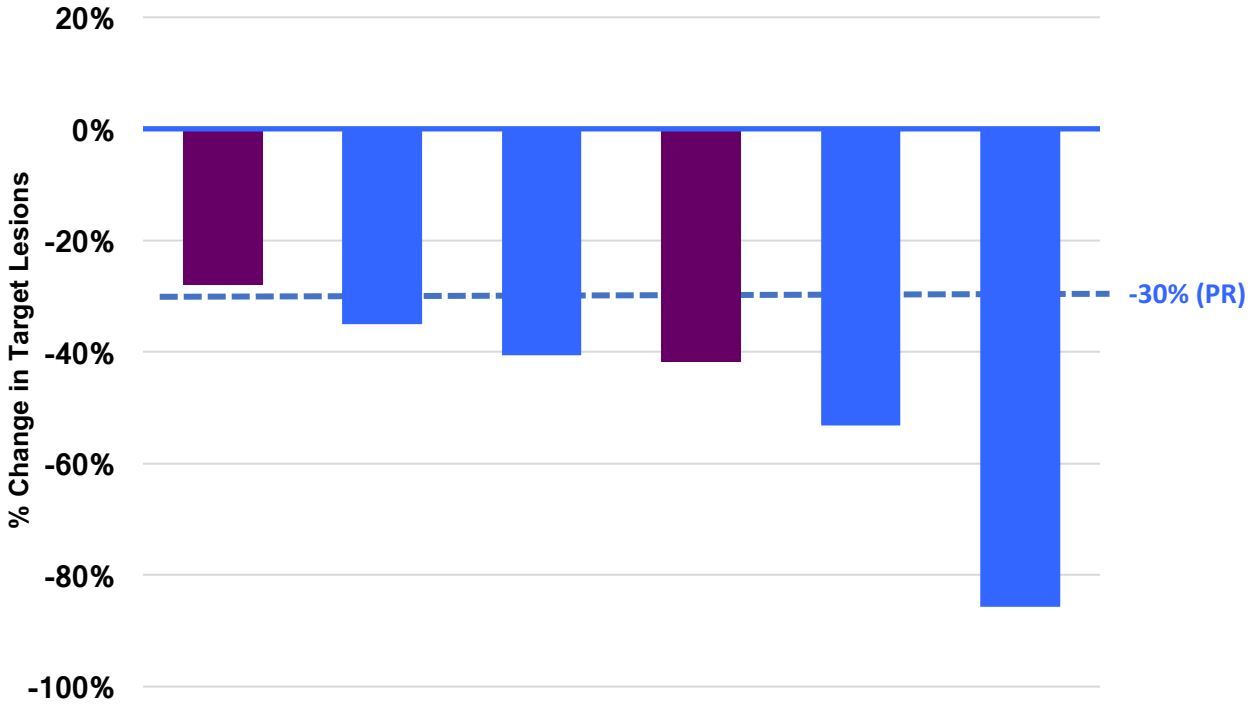


Preliminary data published in 2017 ASCO Annual Meeting Proceedings, J Clin Oncol 35, 2017 (suppl; abstr 4110)

MVT-5873 Demonstrates Marked Efficacy In Combination With First Line Chemotherapy in PDAC

- Combination with Gem/nab in first line treatment of näive PDAC patients
- Dosing at 0.125 mg/kg weekly is generally well tolerated
- Promising response data: 5 of 6 patients achieving Partial Response and one Stable disease
- Reduction in CA19-9 biomarker corroborates positive response to treatment
- New cohort expansion initiated with up to 10 additional patients to assess safety and response data
- Full data report upcoming mid-year 2018

All Patients Experience Measurable Meaningful Reduction in Tumor Size by RECIST



Adding MVT-5873 To Standard of Care Improves Outcomes – Full Data Readout Mid-Year

Best Response	SOC (Gem+Nab)[1]	SOC + MVT-5873
Complete Response	Less than 1%	0%
Partial Response	23%	83%
Stable Disease	27%	17%
Progressive Disease	20%	0%
Could not be evaluated	30%	0%
Disease Control Rate (CR+PR+SD)	50%	100%

- Early results from small number (n=6) of patients is encouraging in very difficult disease
- Similar results from expansion cohort of subjects will attract potential partners

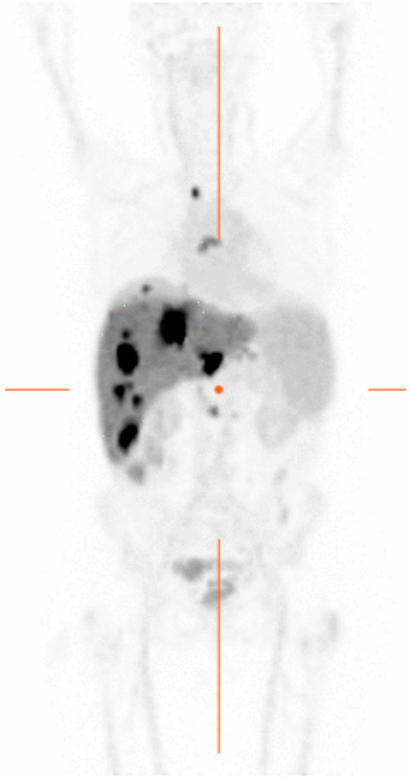
1. N ENG J MED 369;18 October 31, 3013

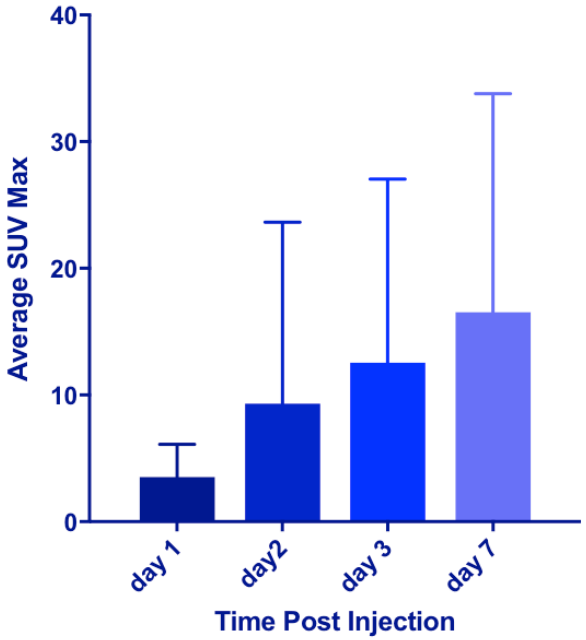
HuMab-5B1 IMAGING PHASE 1 PROGRAM

MVT-2163 PET Imaging Agent Establishes Safety and Targeting Mechanism

HuMab-5B1 PET Agent Specifically Targets CA19-9 Positive Tumors – Can Significantly Aid Diagnosis and Surgery Assessment

Focal radiotracer uptake above background was observed in primary tumors and metastases from day 2 and continuously increased through day 7





- Day 7 tumor SUV_{max} were as high as 101 g/mL
  - FDG PET SUV_{max} values ~10 g/mL
- High focal uptake was frequently seen in chest/abdominal/pelvic nodes.
- In several instances, CT did not indicate any corresponding abnormality

"This is amongst the highest lesion uptake we have ever seen for a radio labeled antibody"- MSKCC Investigator

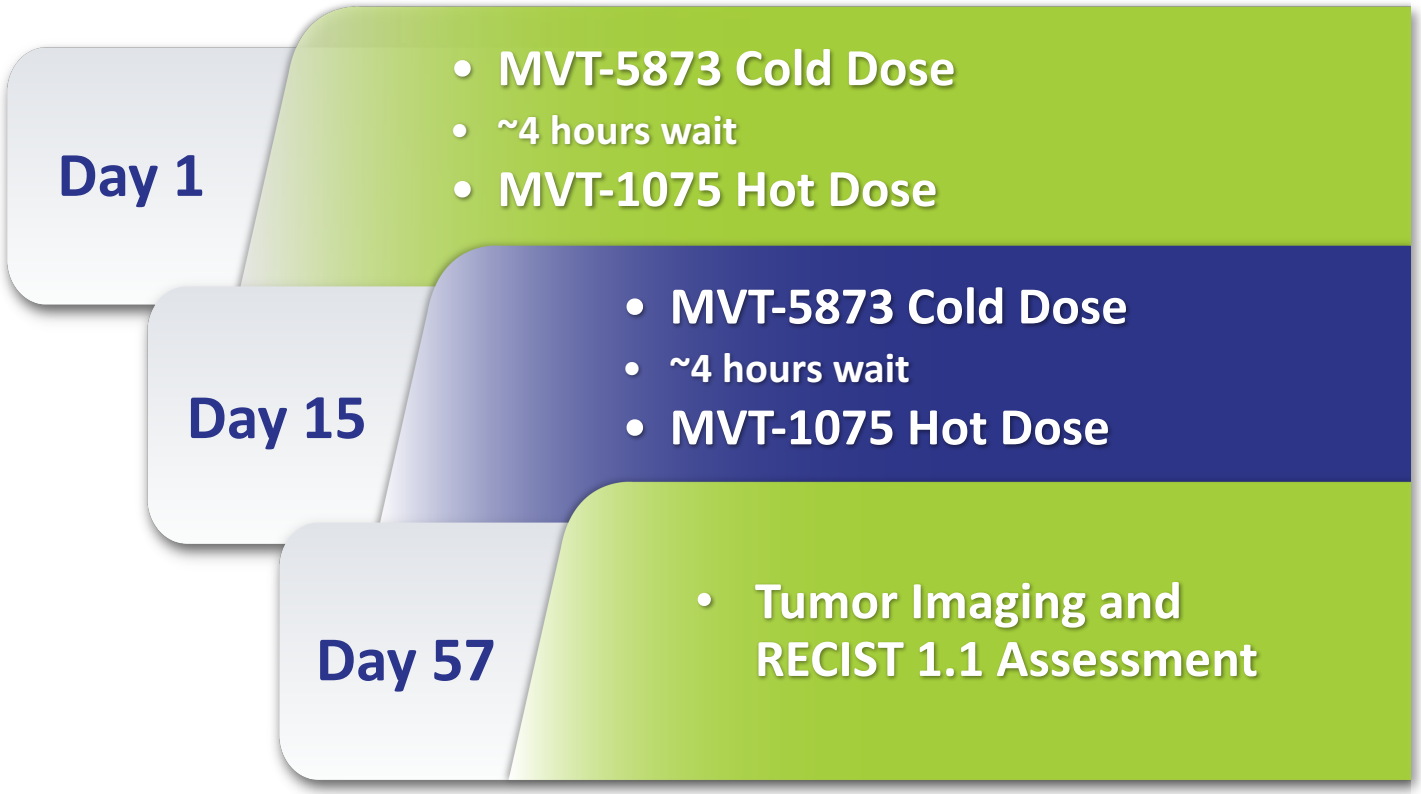
*Published in 2017 SNMMI Annual Meeting Proceedings, J Nucl Med 2017 58:385

HuMab-5B1 RIT
PHASE 1 PROGRAM

MVT-1075 Radioimmunotherapy (RIT)

RIT (MVT-1075) Phase 1a Clinical Trial

One Cycle of Treatment



Safety monitoring visits throughout and dosimetry completed day 8

First-In-Human Phase 1

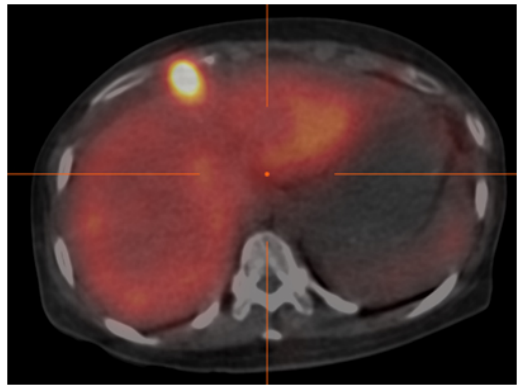
- First cohort enrolled and treated.
- Nonrandomized, open-label, dose-escalation (3+3 design) cohort expansion study of MVT-5873 / MVT-1075 in patients
- Previously treated CA19-9+ PDAC or other CA19-9+ malignancies

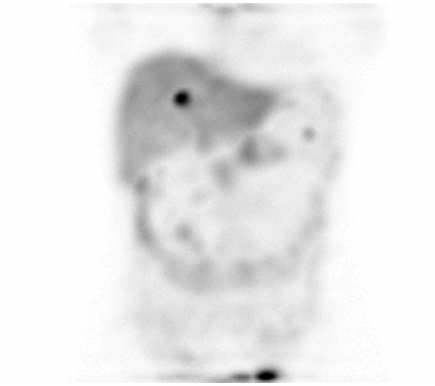
Objectives

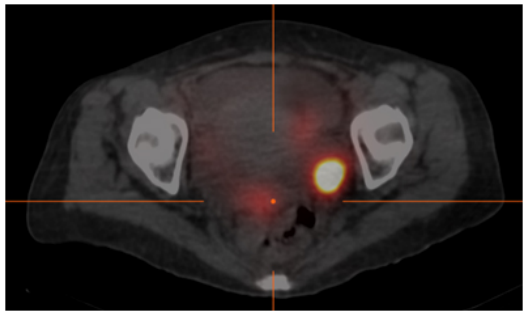
- Determine the MTD and safety profile of MVT-5873 / MVT-1075
- Determine the dosimetry and PK of MVT-1075
- Evaluate tumor response rate (RECIST 1.1) and duration of response
- Evaluate relationships between circulating CA19-9 levels and tumor response

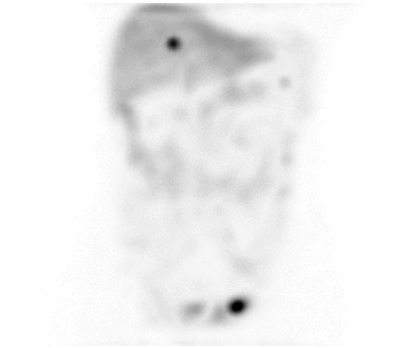
MVT-1075 Clinical Summary

^{177}Lu-DTPA-HuMab-5B1: SPECT/CT









- First cohort demonstrated dosimetry and organ exposure as expected
- Accumulation of radiolabeled antibody seen on tumor
- Good correlation with diagnostic CT
- Manageable hematologic toxicities
- Accrual is ongoing and dose escalation planned
- Announcement of cohort results in first quarter of 2018
- Enrolled first patient in second cohort with escalated dose

Unpublished Clinical Data

Anti-Tn PRECLINICAL ANTIBODY PROGRAM

Discovery, Engineering, Testing

Anti-Tn Antibody Program Is Already Subject of Partnering Discussions

- Fully human lead anti-Tn antibody identified and optimized
  - Binds specifically to target Tn
  - In-house engineering effort improved affinity >25X
  - Does not bind closely related antigens, retain high specificity of parent
  - Internalizes efficiently, may be suitable as targeting agent
- Lead antibody used to further validate Tn target
  - Binds to high percentage of colon, ovarian, and breast tumor tissue, including breast tumors that are negative for estrogen, progesterone and HER2 receptors (triple negative breast cancer)

Lung, ovarian, breast, and colon tumor microarrays stained with lead anti-Tn antibody

Tumor	Positive/ total cores	% 2F3G3 positive
Lung (SCLC)	3/80	4%
Ovarian	35/75	47%
Breast	107/142	75%
TNBC	24/27	89%
Colon (malignant))	6/20	30%
Colon (metastatic)	10/20	50%

CORPORATE UPDATE

Two Complimentary Strategies to Build Shareholder Value

Corporate Partnering

- Current assets are subject of ongoing partnering discussions
- Public guidance is we will close one or more this quarter
- Greenhill & Co. engaged as advisory bank to facilitate transactions

+

Clinical Success

- Lead 5B1 antibody in combination with first line therapy in pancreatic cancer
  - Positive initial results
  - Confirmative expansion trial underway
- Anti-Tn antibody subject of significant interest by large pharma

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Milestones

- MabVax raises capital from core group of investors
- Data readout on MVT-5873 combo with chemo trial mid-year
- Patent applications filed to protect anti-Tn antibody program
- One or more partnering transactions by end of this quarter
- Result of capital raise and transactions will provide capital for balance of year

Financial Snapshot

NASDAQ	MBVX
Share Price*	$1.30
Market Cap*	$11.65M
50-Day Average Volume*	111K
Common Stock Outstanding	9.0M
Preferred Stock (Common Equivalents)	6.1M

- Share price, volume, market cap and shares outstanding are as of April 30, 2018

Management and Board of Directors

Management

J. David Hansen
President, CEO and Chairman

Gregory P. Hanson, CMA, MBA
Chief Financial Officer

Philip O. Livingston, M.D.
Chief Scientific Officer

Paul W. Maffuid, Ph.D.
EVP, Research and Development

Paul F. Resnick, M.D.
VP and Chief Business Officer

Wolfgang Scholz, Ph.D.
VP, Antibody Discovery

G. Jonah Rainey, Ph.D.
Executive Director, Antibody Research

Board of Directors

J. David Hansen
President, CEO and Chairman

Jeffrey F. Eisenberg
CEO Xenetic Biociences; Former CEO Noven Pharmaceuticals

Paul V. Maier
Former CFO Sequenom Inc., Former Sr. VP & CFO Ligand Pharmaceuticals

Thomas C. Varvaro
CFO of ChromaDex, Fast Heat, Leaf Bakery

Kenneth M. Cohen
Founder, Former President and CEO of Somaxon Pharmaceuticals, Synbiotics

MabVax therapeutics

Developing Unique Human Monoclonal Antibody-Based Products for Difficult to Treat Cancers

NASDAQ: MBVX

www.mabvax.com

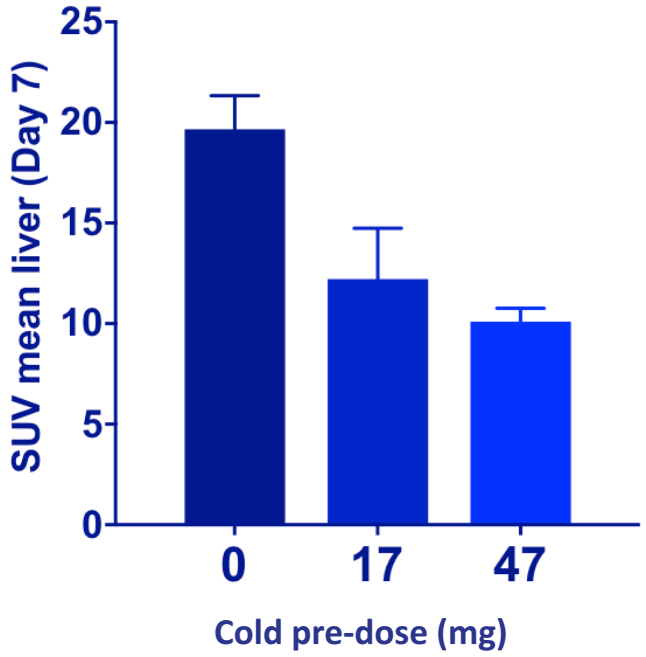
Summary

- Successfully completed Phase 1a programs for MVT-5873 (antibody) and MVT-2163 (PET)
  - Over 50 patients in three active clinical investigations with the HuMab-5B1 Antibody
- Highly encouraging early results from MVT-5873 in combination with first line chemotherapy
  - Cohort expansion underway to confirm early results mid-year
- Initiated radioimmunotherapy (MVT-1075) Phase 1 trial guided by recent clinical experience
  - Early safety and target validation data due 1Q18
- Significant unmet medical need in cancers with poor prognosis
- Large addressable market for CA19-9 positive malignancies
  - Includes pancreatic, lung and colon cancers and other GI cancers
- Robust IP portfolio
- Proven Management Team, Board of Directors and a world-class scientific team
- Formal strategy and process in place to maximize shareholder value

Cold-Hot Dosing Strategy Reduces Liver and Spleen Accumulation

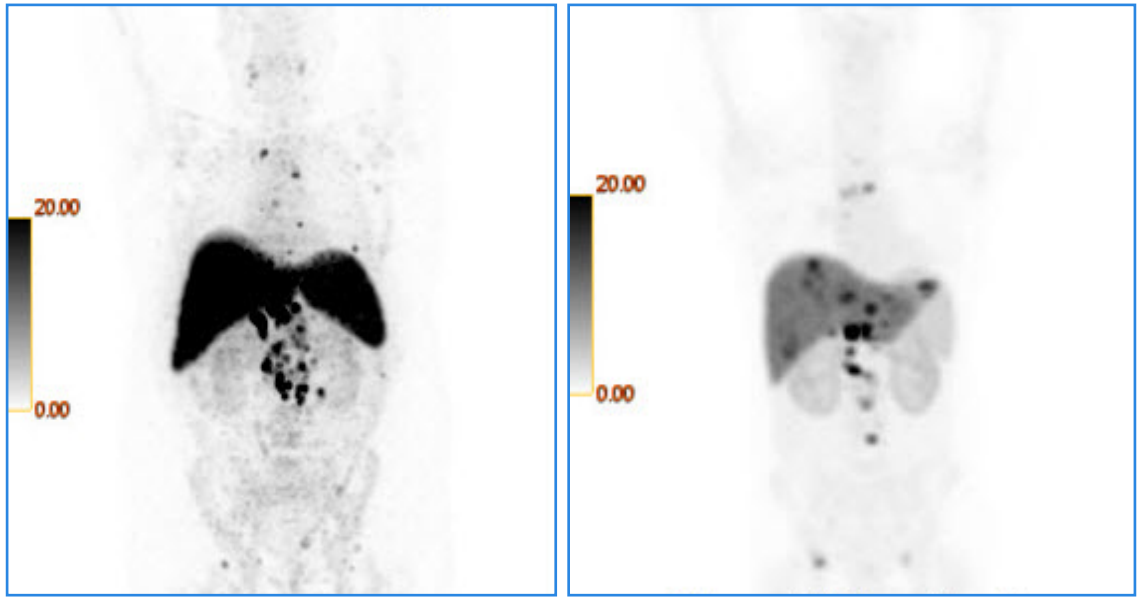
Data Support Using the Cold-Hot Dosing Strategy for RIT Program

SUV defined as mathematically derived ratio of tissue radioactivity concentration divided by whole body average at a point in time



SUV of normal liver decreased with increasing cold mass administered

MIP images of two patients illustrating decreased liver SUV after cold pre-dose at day 7



Toxicities were limited to infusion reactions that resolved on the day of the injection, with some requiring routine medication

Published in 2017 SNMMI Annual Meeting Proceedings, J Nucl Med 2017 58:385

Vaccine Programs and Associated Vaccine Antigen Targets Utilized for HuMab Fully Human Antibody Programs

Study	Cancer Type	MBVX Study Name	Clin Trial ID	Vaccine Components	Phase	PI
1	Sarcoma	MV-0109DP001	NCT01141491	GD2L-KLH, GD3L-KLH, GM2-KLH + OPT-821	2	Richard Carvajal, MD
2	Breast	06-156	NCT00470574	sLe^a-KLH [1]	1	Theresa Gilewski, MD
3	Melanoma	06-086	NCT00597272	GD2L-KLH, GD3L-KLH	1	Paul Chapman, MD
4	Ovarian-Bev	10-099	NCT01223235	Globo H, GM2, Tn-MUC1 [2], TF(c) + bevacizumab + OPT-821	1	Paul Sabbatini, MD
5	SCLC	08-095	NCT01349647	GD2L+GD3L& Fuc-GM1& globoH& NP-PSA (1) + OPT-821	1	Lee Krug, MD
6	Ovarian-Uni	09-184	NCT01248273	Globo-H-GM2-sTn-TF-Tn-KLH + QS21 (Unimol) [2]	1	Paul Sabbatini, MD

Source for [1] HuMab-5B1 Antibody Program and [2] HuMab-Tn Antibody Program