ASX ANNOUNCEMENT
22 APRIL 2024

RADIOPHARM VENTURES INSTITUTIONAL & VENTURE CAPITAL PRESENTATION

Sydney, Australia – 22 April 2024 – Radiopharm Theranostics (ASX:RAD, "Radiopharm" or the "Company"), a developer of a world-class platform of radiopharmaceutical products for both diagnostic and therapeutic uses, is pleased to announce a presentation on the progress of Radiopharm Ventures, the joint venture between RAD and MD Anderson, to multiple US biotech specialised funds and venture capital firms.

The presentation was given at the 'Oncology/Cell Tx Innovation: The Texas Trifecta' event, featuring MD Anderson Cancer Center (MDA), Baylor College of Medicine (BCM) & Rice University (RU) and organized by Truist Securities Life Sciences.

RAD CEO & Managing Director Riccardo Canevari and Professor David Piwnica-Worms presented on the lead agent for Radiopharm Ventures, RV 01, a B7H3 targeted radiopharmaceutical therapy designed with strong affinity for the 4IG isomer of B7H3 that is highly expressed in the tumor and not in the healthy tissues. The presentation also covered detail on the new surfaceomes platform.

"It was an excellent opportunity for RAD and Radiopharm Ventures to be invited to present at this event, and our presentation generated significant interest from the attendees," said Mr Canevari.

The presentation slides used at the event are attached below.

About Radiopharm Theranostics

Radiopharm Theranostics is a clinical stage company developing a world-class platform of innovative radiopharmaceutical products for diagnostic and therapeutic applications in areas of high unmet medical need. Radiopharm has been listed on the ASX (RAD) since November 2021. The company has a pipeline of distinct and highly differentiated platform technologies spanning peptides, small molecules and monoclonal antibodies for use in cancer, in pre-clinical and clinical stages of development from some of the world's leading universities and institutes. The pipeline has been built based on the potential to be first-to-market or best-in-class. The clinical program includes one Phase II and two Phase I trials in a variety of solid tumour cancers including lung, pancreas and brain. Learn more at Radiopharmtheranostics.com.

Authorized on behalf of the Radiopharm Theranostics Board of Directors by Executive Chairman Paul Hopper.

For more information:

Riccardo Canevari
CEO & Managing Director
P: +1 862 309 0293
E: rc@radiopharmtheranostics.com

ASX ANNOUNCEMENT
22 APRIL 2024

Matt Wright
NWR Communications
P: +61 451 896 420
E: matt@nwrcommunications.com.au

Follow Radiopharm Theranostics:
Website – https://radiopharmtheranostics.com/
Twitter – https://twitter.com/TeamRadiopharm
Linked In – https://www.linkedin.com/company/radiopharm-theranostics/
InvestorHub – https://investorhub.radiopharmtheranostics.com/

ASX ANNOUNCEMENT
22 APRIL 2024

IMPORTANT NOTICE AND DISCLAIMER

The information in this presentation does not constitute personal investment advice. The presentation is not intended to be comprehensive or provide all information required by investors to make an informed decision on any investment in Radiopharm Theranostics Ltd ACN 647 877 889 (Company). In preparing this presentation, the Company did not take into account the investment objectives, financial situation and particular needs of any particular investor. Further advice should be obtained from a professional investment adviser before taking any action on any information dealt with in the presentation. Those acting upon any information without advice do so entirely at their own risk.

Whilst this presentation is based on information from sources which are considered reliable, no representation or warranty, express or implied, is made or given by or on behalf of the Company, any of its directors, or any other person about the accuracy, completeness or fairness of the information or opinions contained in this presentation. No responsibility or liability is accepted by any of them for that information or those opinions or for any errors, omissions, misstatements (negligent or otherwise) or for any communication written or otherwise, contained or referred to in this presentation. Neither the Company nor any of its directors, officers, employees, advisers, associated persons or subsidiaries are liable for any direct, indirect or consequential loss or damage suffered by any person as a result of relying upon any statement in this presentation or any document supplied with this presentation, or by any future communications in connection with those documents and all of those losses and damages are expressly disclaimed.

Certain statements contained in this presentation, including, without limitation, statements containing the words "believes," "plans," "expects," "anticipates," and words of similar import, constitute "forward-looking statements." Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Such factors include, among others, the following: the risk that our clinical trials will be delayed and not completed on a timely basis; the risk that the results from the clinical trials are not as favourable as we anticipate; the risk that our clinical trials will be more costly than anticipated; and the risk that applicable regulatory authorities may ask for additional data, information or studies to be completed or provided prior to their approval of our products. Given these uncertainties, undue reliance should not be placed on such forward-looking statements. The Company disclaims any obligation to update any such factors or to publicly announce the results of any revisions to any of the forward-looking statements contained herein to reflect future events or developments except as required by law.

This presentation is not a prospectus or other disclosure document under the Corporations Act 2001 (Cth) and will not be lodged with the Australian Securities and Investments Commission. This presentation is for information purposes only and is not an invitation or offer of securities for subscription, purchase or sale in any jurisdiction. The distribution of this presentation (including electronically) outside Australia may be restricted by law. If you come into possession of this presentation, you should observe such restrictions as any non-compliance with these restrictions could contravene applicable securities laws (see the section captioned 'International offer restrictions'). In particular, this document does not constitute an offer to sell, or a solicitation of an offer to buy, securities in the United States. The New Shares have not been, and will not be, registered under the US Securities Act of 1933 and may not be offered or sold in the United States except in transactions exempt from, or not subject to, the registration requirements of the US Securities Act and applicable US state securities laws.

Any opinions expressed reflect the Company's position at the date of this presentation and are subject to change.

RADIOPHARM VENTURES

A Joint Venture between

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Making Cancer History®

RAD
RADIOPHARM THERANOSTICS

Company Presentation – *April 2024*

COMPANY VISION & STRATEGY

B7H3 FRANCHISE & NOVEL TARGETS FOR RADIOPHARMACEUTICAL THERAPIES

Private Company created in Q4 2022 between MD Anderson Cancer Center (MDACC) and RAD

- Four technologies licensed from MDACC
- R&D costs currently covered by Radiopharm Theranostics (RAD: ASX)

Intellectual Property

- B7H3 targeting mAb with patent protection 2044+ (Global rights, exclusivity, any therapeutic Isotope)
- Three additional technologies not yet disclosed, with potential indications in multiple solid tumors, targeting novel pathways

Deep Expertise in Radiopharmaceuticals

- Executive team includes top MD Anderson scientists and Radiopharm Theranostics Leadership Team
- Radiopharm Ventures has access to MD Anderson preclinical labs (in vitro and animal models), nuclear medicine facilities (radiolabeling) & clinical development experts (Phase I-II trial and protocol design)

LEADERSHIP TEAM and JV SCIENTIFIC COMMITTEE

Prof. David Piwnica-Worms

- Inventor B7H3 targeting molecule
- Department Chair, Department of Cancer Systems Imaging, Division of Diagnostic Imaging, MDACC
- Professor, Department of Cancer Systems Imaging, Division of Diagnostic Imaging, MDACC
- Executive Director, Quantitative Imaging Analysis Core (QIAC), Division of Diagnostic Imaging, MDACC
- Gerald Dewey Dodd, Jr., Endowed Distinguished Chair in Diagnostic Imaging, Division of Diagnostic Imaging, MDACC

Prof. Sam Hanash

- Inventor three technologies (undisclosed)
- Director, Department of Red and Charline McCombs Institute for the Early Detection and Treatment of Cancer, MDACC
- Co-Director, Department of Center for Global Cancer Early Detection, MDACC
- Distinguished Chair, Department of Evelyn & Sol Rubenstein Distinguished Chair for Cancer Prevention, MDACC
- Professor, Department of Clinical Cancer Prevention - Research, Division of OVP, Cancer Prevention and Population Sciences, MDACC

Riccardo Canevari

- Radiopharm Theranostics CEO since 2021
- Previously, Chief Commercial Officer of Novartis Company Advanced Accelerator Applications S.A.
- Lead for Lutathera in-market growth strategy and Pluvicto launch strategy
- Senior Vice President & Global Head, Breast Cancer Franchise, for Novartis Oncology
- Lead for CDK4/6 (Kisqali) global launch in HR+ Breast Cancer
- Lead for PI3K inhibitor (Piqray) global launch in HR+ Breast Cancer

COMPANY PIPELINE

CODE	TARGET & MOLECULE	INDICATION	Dx/Tx	ISOTOPE	NOTES
RV 01	**B7H3 mAb**	Prostate, Lung, Hepatocellular Carcinoma, Pancreatic, Colorectal, Head & Neck, Breast	Therapy	Lu177 (β)	CMC GMP production ongoing Preclinical studies completed Next steps: complete CMC, and conduct IND enabling GLP Tox and Biodistribution studies Entering Phase 1 in the first half of 2025
RV02 **RV03** **RV04**	**Targets UNDISCLOSED** **BINDING MOIETY: Nanobody platform**	Multiple solid tumors	Therapy	Lu177(β) Tb161 (β+Au) Ac225 (α)	Candidate selection ongoing

Supply Chain Enhancement

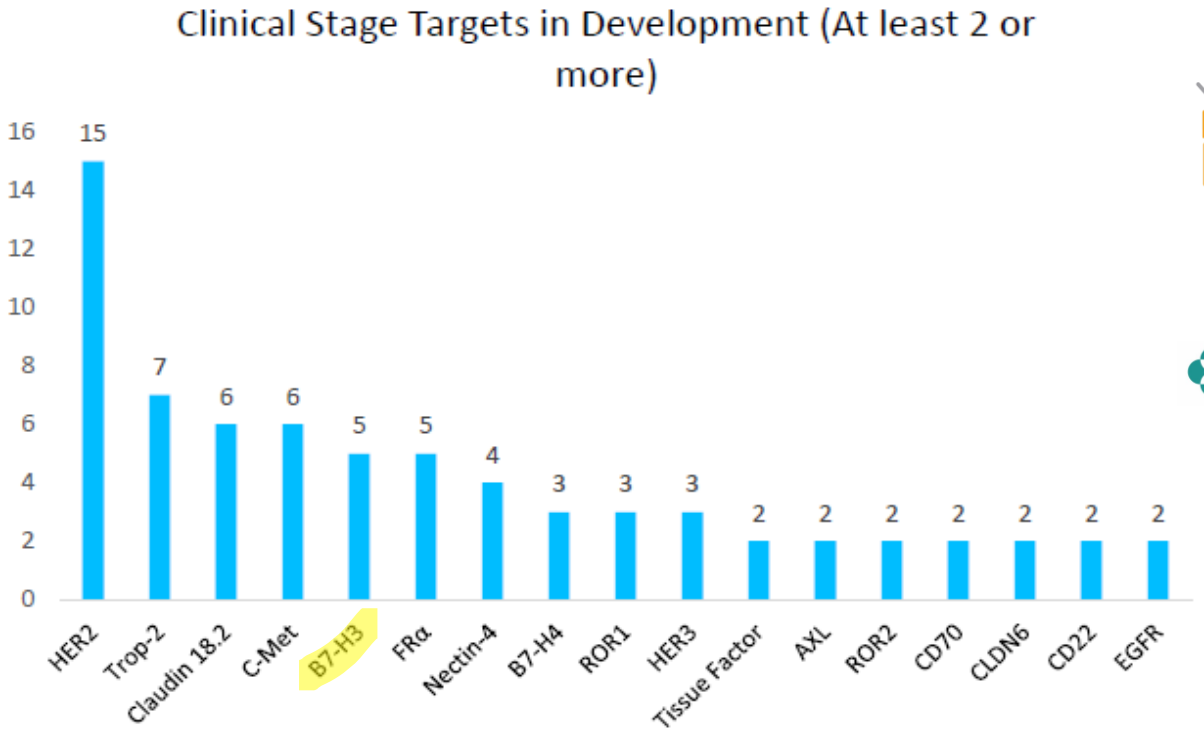
RADIOPHARM VENTURES

RV01: Lead Candidate

B7H3-Targeting Monoclonal Antibody (mAb) for Beta-Radioligand Therapy

FIVE B7H3 ANTIBODY DRUG CONJUGATES IN DEVELOPMENT

PHASE 2 READOUT WITH ADC IN PROSTATE CANCER EXPECTED SOON



Source: BioMed Tracker, Leerink Partners Research

MacroGenics

Ph2 TAMARAK B7H3 study in mCRPC*

Interim efficacy data May 31st, 2024

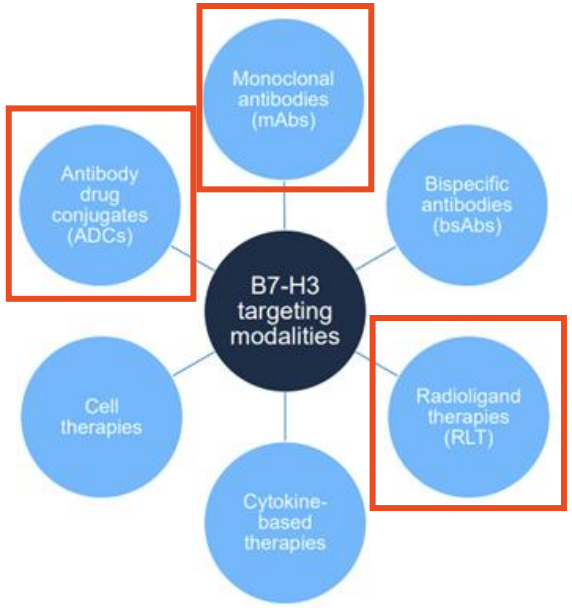
MERCK

Daiichi-Sankyo

Ph3 Ideate-2 B7H3 study in SCLC**

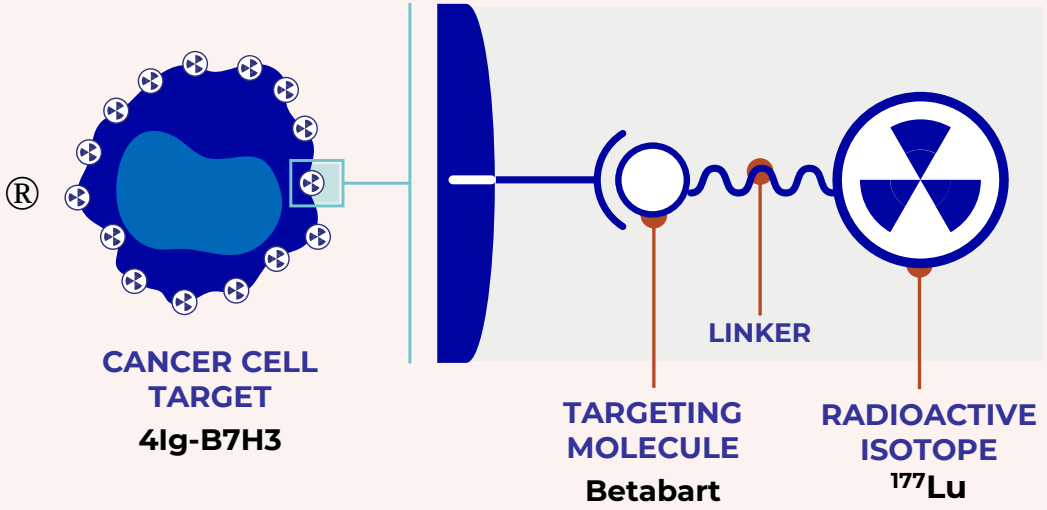
Initiation in 2024

DIFFERENT MODALITIES TO TARGET B7H3



**mCRPC*: Metastatic Castration Resistant Prostate Cancer. NCT05551117*
*** **SCLC**: Small Cell Lung Cancer. NCT06203210*

FIRST AND ONLY SELECTIVE B7H3 RADIOPHARMACEUTICAL IN DEVELOPMENT

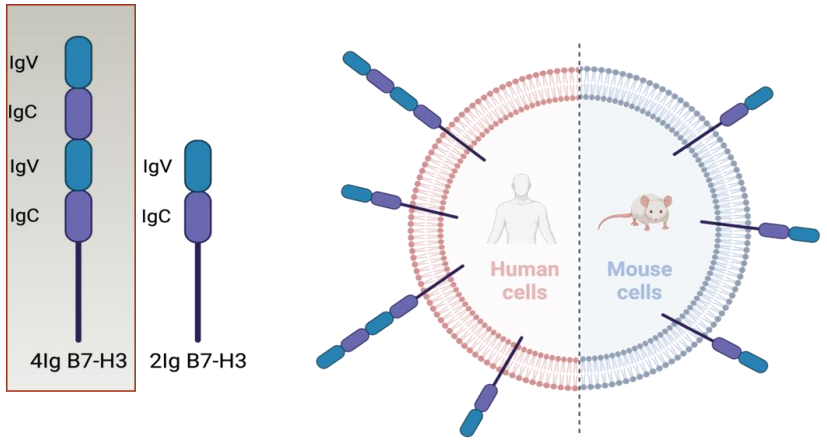


BETABART®

Isoform-Selective Targeting of 4Ig-B7-H3 for PET Imaging and Beta-Radioligand Therapy

THERAPY

- Multi-indication potential in B7H3+ solid tumors (Prostate, Pancreatic, Hepatocellular Carcinoma, Colorectal, Breast, H&N, Lung, Ovarian, …)
- Phase I planned in early 2025



- A soluble 2Ig-B7H3 isoform circulating in the blood is a potential pseudo-target decoy (sink) not widely appreciated as a confounding factor in therapy.

Figure made with Biorender.com

CLINICAL DEVELOPMENT & REGULATORY STRATEGY

- Preclinical models validated selective targeting of tumor cells
- Significant tumor reduction and increased survival in the animal model

- GMP CMC production ongoing. GMP batch in Q3 2024
- GLP TOX and Biodistribution studies in Q3 –Q4 2024
- Phase I trial in the first half of 2025

Preclinical	PHASE I
→	**Basket trial in multiple indications**
CMC GMP, GLP Tox, BioD	**25 pts**
completed by end 2024	**Opening in first half 2025**

Targeting B7H3 in Advanced Prostate Cancer may Optimize Clinical Outcomes, Reduce Off-Tissue Toxicities & Improve Quality of Life

*Current SoC Treatments: ARIs, PARPs, PSMA RLT**

NOVEL ARIs & PARPs

Abiraterone
Apalutamide
Darolutamide
Enzalutamide
Olaparib
Rucaparib

PSMA RLT

Lu 177

PLUVICTO — NOVARTIS
PNT 2002 — LANTHEUS
PSMA I&T — CURIUM

Pb 212

ADVC0011 — AdvanCell
AB001 — ARTBIO

Ac 225

FPI 225 — Fusion
PSMA 617 — NOVARTIS
PSMA R2 — NOVARTIS
Pelgi — BAYER
Trillium — BAYER
Conv01 — ENERGENT THERAPEUTICS
Alpha01 — alpha 9 THERANOSTICS

Cu 67

bisPSMA — CLARITY PHARMACEUTICALS

At 211

PSMA — z-alpha

NEW Mechanisms of Action

B7H3

MACROGENICS

Most advanced B7H3 ADC in development

RADIOPHARM VENTURES

First and only selective B7H3 radiopharmaceutical in development

CD46 — *ADC mAb* — FORTIS THERAPEUTICS

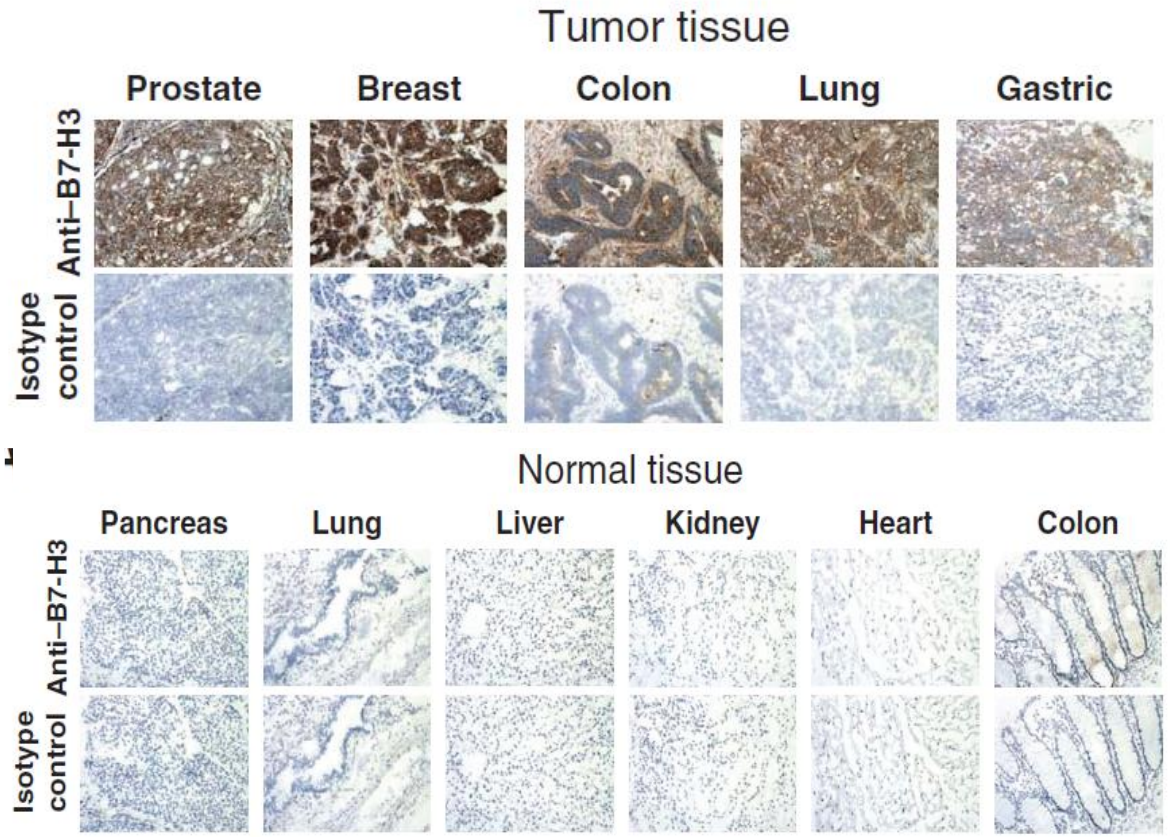
STEAP1 — *T-cell engager* — AMGEN

***SoC**: Standard of Care*
***ARIs**: Androgen Receptor inhibitors*
***PARPs**: Poly (ADP-ribose) Polymerase*
***RLT**: Radioligand Therapies*

PRECLINICAL DATA DEEP DIVE

Isoform-Selective Targeting of 4Ig-B7H3 for Imaging and Beta-Radioligand Therapy

B7H3 PATHWAY HIGHLY ATTRACTIVE PAN-TUMOR TARGET



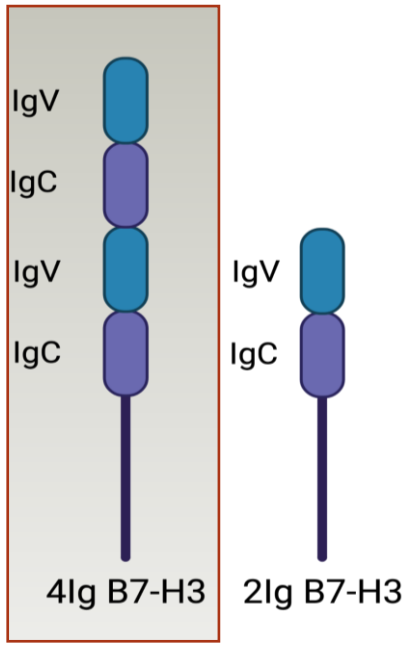
Loo, D. et. al. *Clinical Cancer Research* (2012).

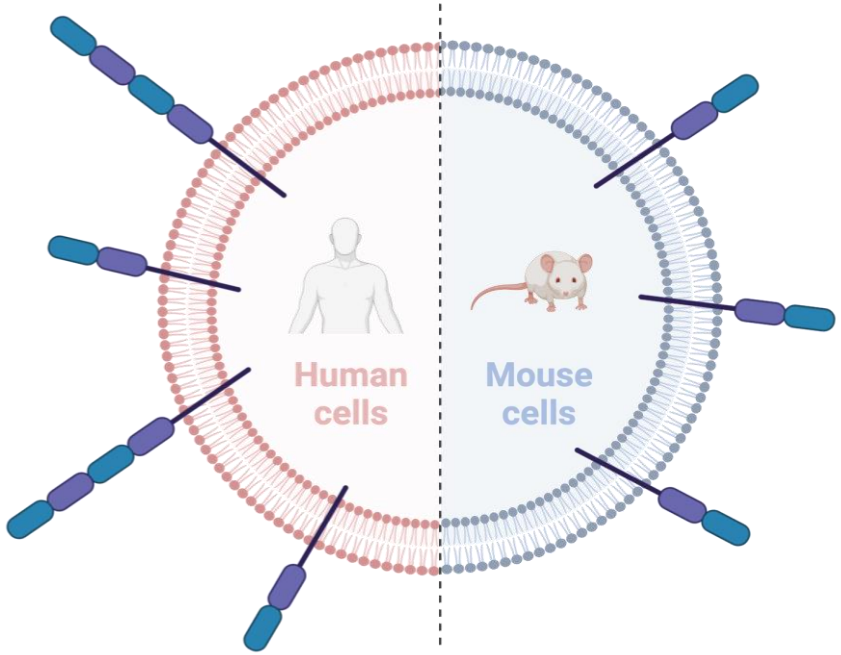
High B7-H3 Expression Levels in Solid Tumors

Potential Indications	B7-H3 Positive*		2+ or Above	
Head and Neck Cancer	19/19	100%	19/19	100%
Kidney Cancer	77/78	99%	75/78	96%
Glioblastoma	65/66	98%	63/66	95%
Thyroid Cancer	34/35	97%	33/35	94%
Mesothelioma	41/44	93%	39/44	89%
Melanoma	132/146	90%	94/146	64%
Prostate Cancer	88/99	89%	51/99	52%
Pancreas Cancer	69/78	88%	45/78	58%
Bladder Cancer	134/156	86%	123/156	79%
Lung Cancer	324/379	85%	300/379	79%
Breast Cancer	189/249	76%	156/249	63%
Ovarian Cancer	59/79	75%	36/79	46%

*B7-H3 positivity reflects any grade staining (1-3+) via FFPE tumor microarray (cytoplasmic, membrane, and vasculature staining); B7-H3 is expressed on tumor as well as tumor vasculature.

B7H3 IS EXPRESSED AS MULTIPLE ISOFORMS





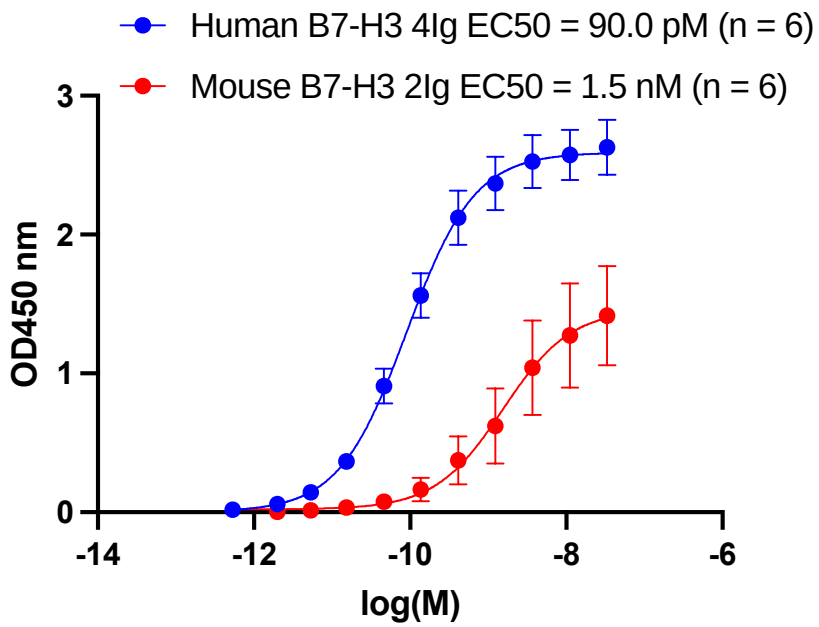
- The 4Ig-B7H3 isoform is the dominant isoform in human cancers.
- A soluble 2Ig-B7H3 isoform circulating in the blood is a potential pseudo-target decoy (sink) not widely appreciated as a confounding factor in therapy.

GOAL: DEVELOP A HIGH-AFFINITY 4IG-ISOFORM-SPECIFIC ANTI-B7H3 TUMOR-TARGETING ANTIBODY

Figure made with Biorender.com

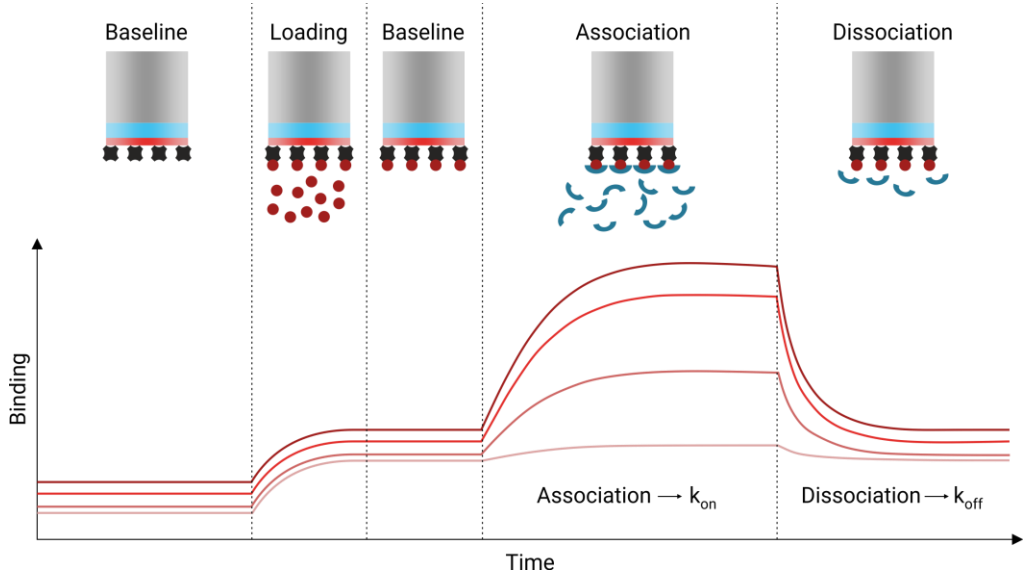
MILL33B, THE MURINE PREDECESSOR MAB CONTAINING THE CDR*, AND OUR HUMANIZED MAB (BETABART®) DEMONSTRATE HIGH AFFINITY & SELECTIVITY FOR HUMAN 4IG-B7H3

MIL33B ELISA



MILL33B Affinity Ratio
4Ig to 2Ig : ~17

BIO-LAYER INTERFEROMETRY ANALYSIS

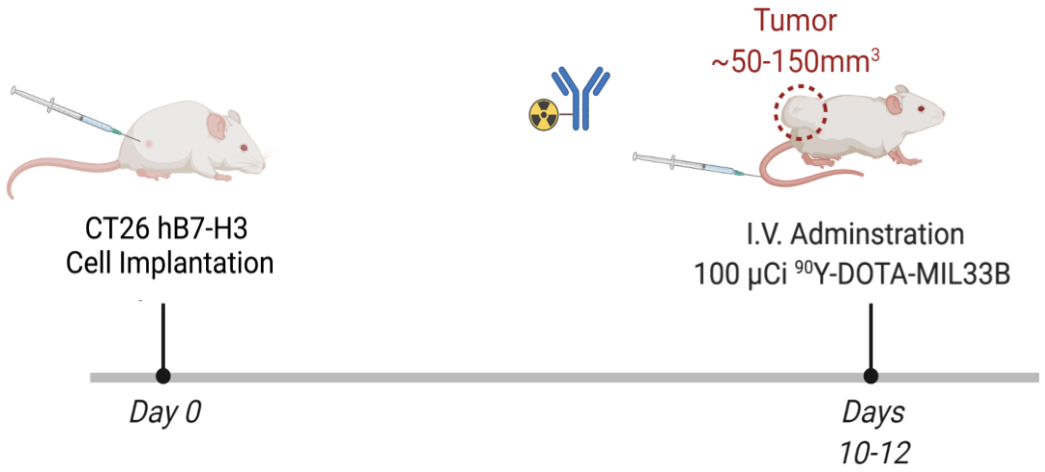


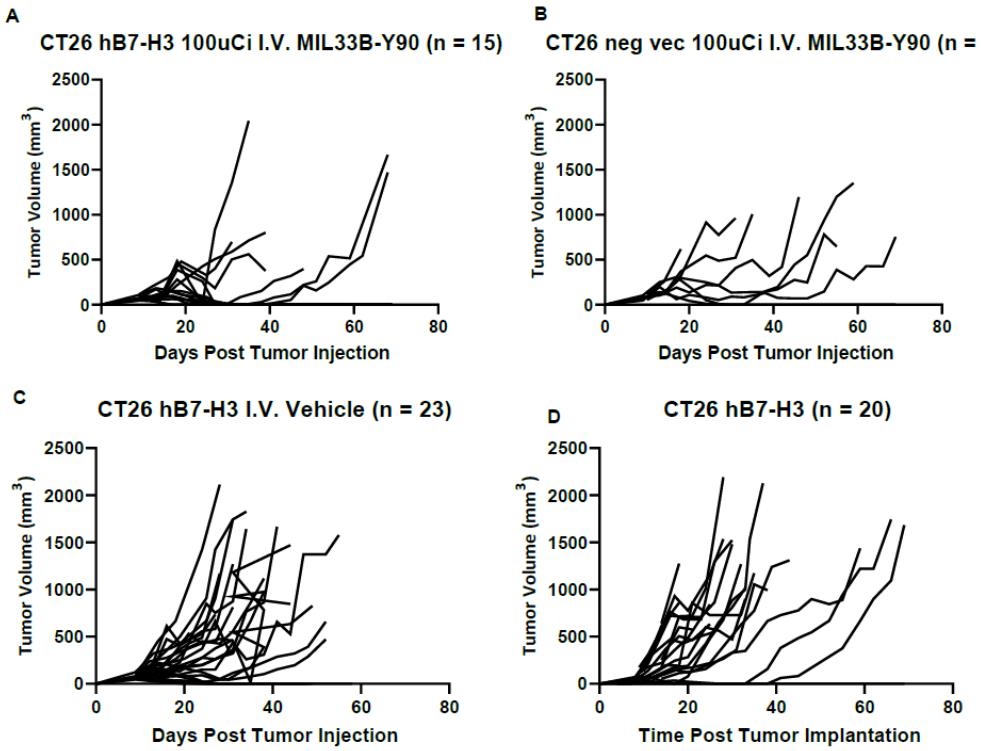
BETABART® Affinity Ratio
4Ig to 2Ig : >300

**CDR: Complementarity-Determining Region*
https://2bind.com/bli/

THERAPEUTIC EFFICACY: TUMOR REDUCTION

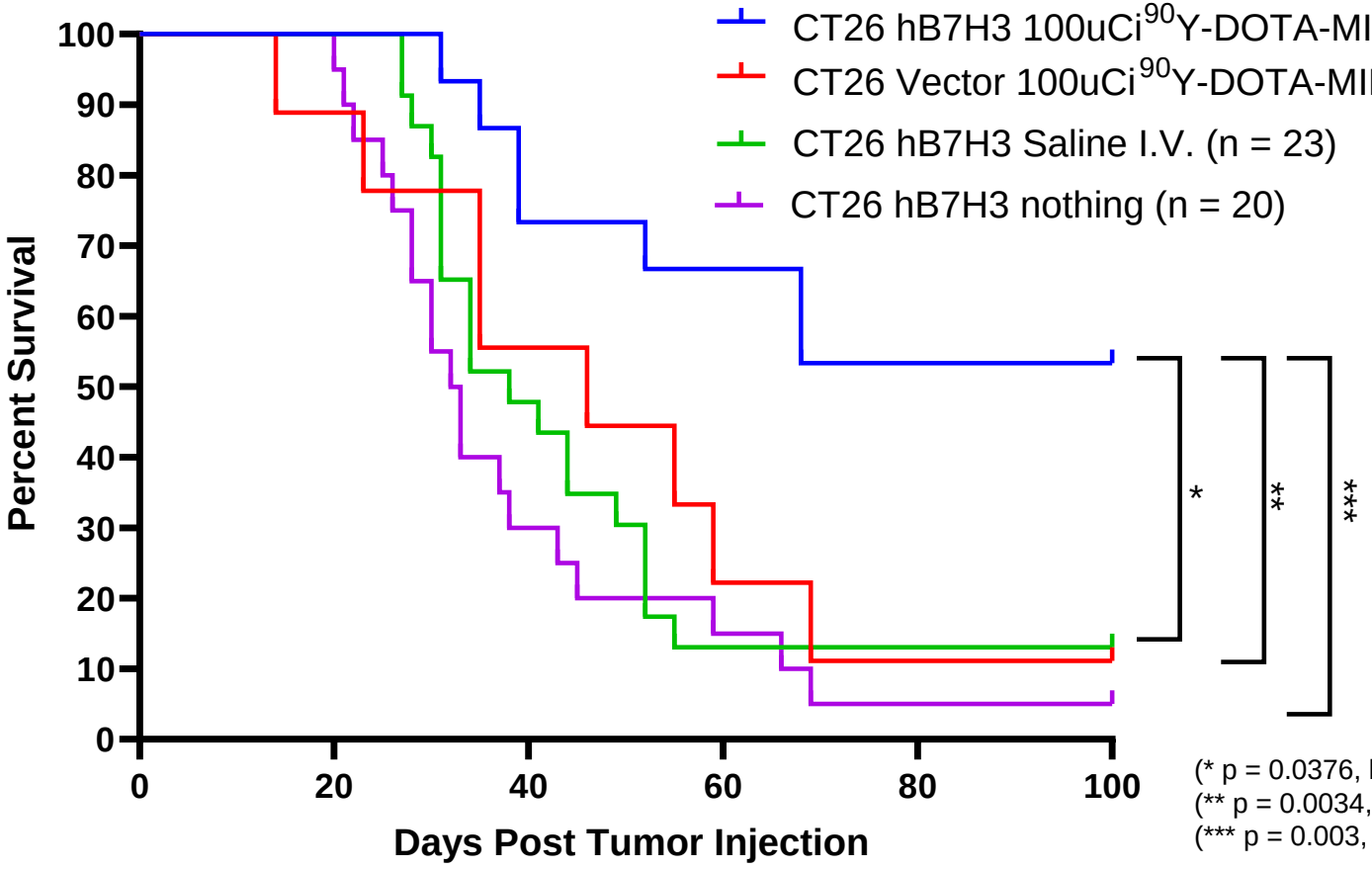
I.V. TREATMENT OF ESTABLISHED IR-RESISTANT CT26 TUMORS WITH I.V. 90Y-DOTA-MIL33B





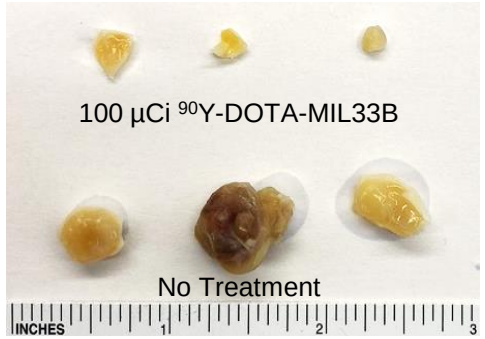
Supplemental Figure 8: Caliper measurements of mice treated with ^{90}Y-DOTA-MIL33B. 15 mice harboring CT26 (h)4Ig-B7-H3 tumors received 100 µCi ^{90}Y-DOTA-MIL33B i.v. leading to partial regression of 3 tumors and complete regression of 8 tumors (**A**). 9 mice harboring CT26 neg vec tumors received 100 µCi ^{90}Y-DOTA-MIL33B i.v. leading to partial regression of 1 tumor and complete regression of one tumor (**B**). We also observed regression of 3 out of 23 CT26 4Ig-B7-H3 tumors that received i.v. saline (**C**) and spontaneous regression of 1 out of 20 untreated CT26 4Ig-B7-H3 tumors (**D**).

THERAPEUTIC EFFICACY: 56% SURVIVAL WITH SINGLE INJECTION



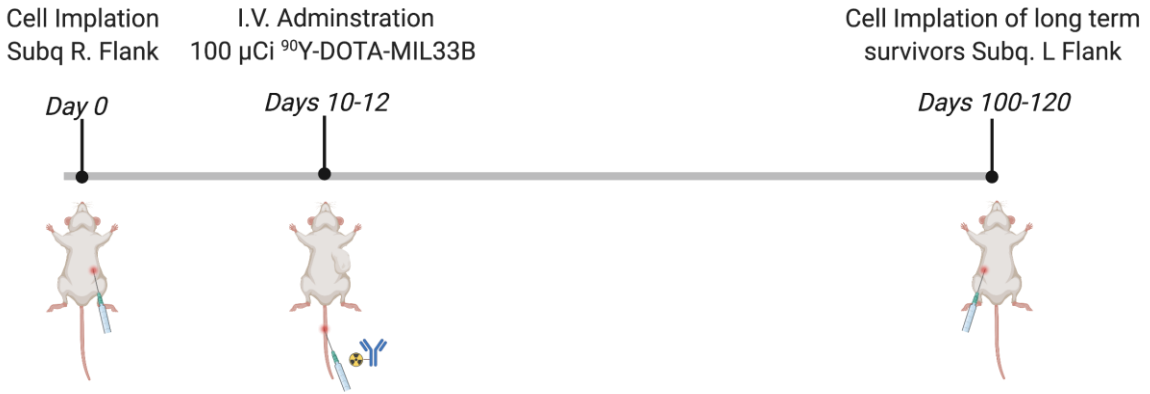
(* p = 0.0376, log-rank test)
(** p = 0.0034, log-rank test)
(*** p = 0.003, log-rank test)

CT26 4Ig-B7H3 Tumors

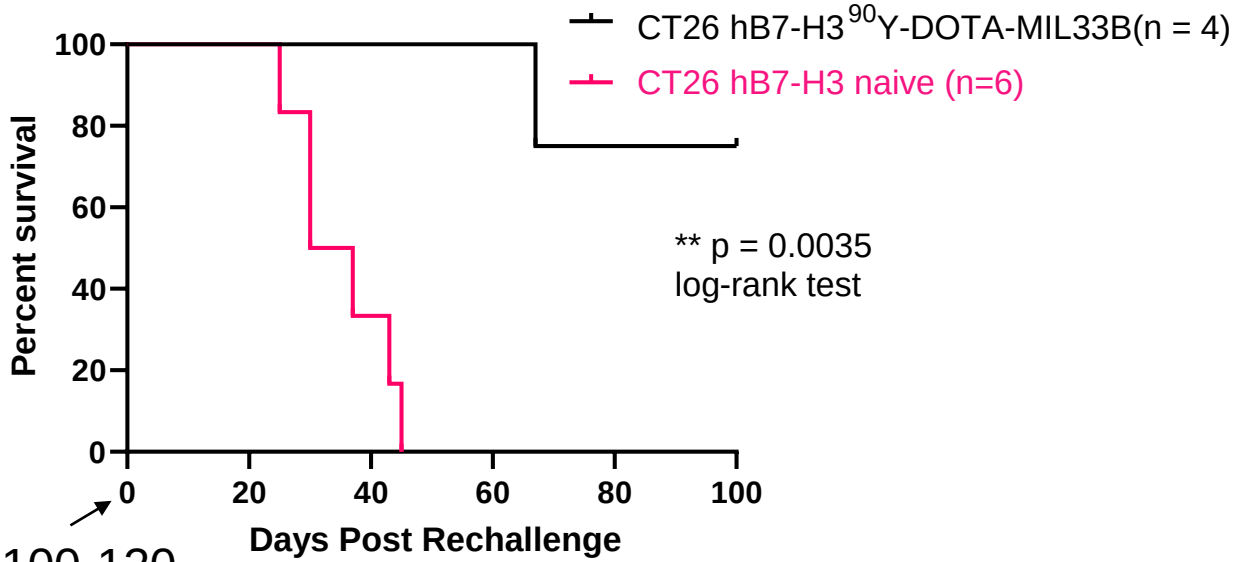


BETABART PREDECESSOR INDUCES IMMUNOLOGICAL MEMORY
(TUMOR REJECTION FROM RADIOTHERAPY PRE-TREATMENT)

LONG-TERM SURVIVORS OF 90Y-DOTA-MIL33B TREATMENT RECHALLENGED WITH CT26 TUMOR CELLS



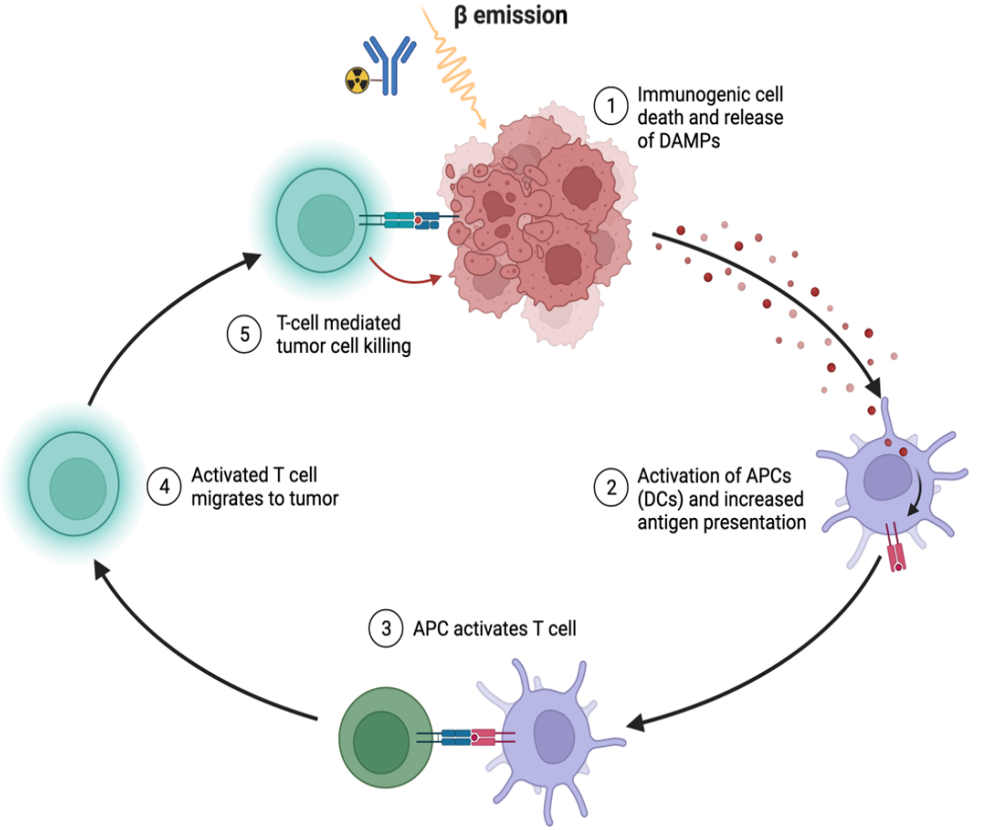
RECHALLENGE SURVIVAL CURVES: PRE-TREATED SURVIVORS VERSUS TREATMENT-NAIVE MICE



100-120 days post initial treatment

CONCLUSIONS: FIRST AND ONLY SELECTIVE B7H3 RADIOPHARMACEUTICAL THERAPY IN DEVELOPMENT

- High affinity (72 pM) antibody specific for 4Ig-B7H3.
- Treatment with a single I.V. dose leads to complete regression of established solid tumors and long-term survival of 56% in our preclinical model
- Initial promising evidence of immune system stimulation and ability to confer immune memory.
- Pre-IND studies to be completed in 2H 2024
- Phase I therapeutic trial to be started in 1H 2025



PIPELINE
FOLLOW-ON ASSETS

Surfaceomes (or Cell surface) Platform

THREE NOVEL “SURFACEOMES” TARGETS IDENTIFIED BY IN-DEPTH PROFILING OF TUMOR CELLS

HIGHLY RELEVANT FOR RADIOPHARMACEUTICAL THERAPIES

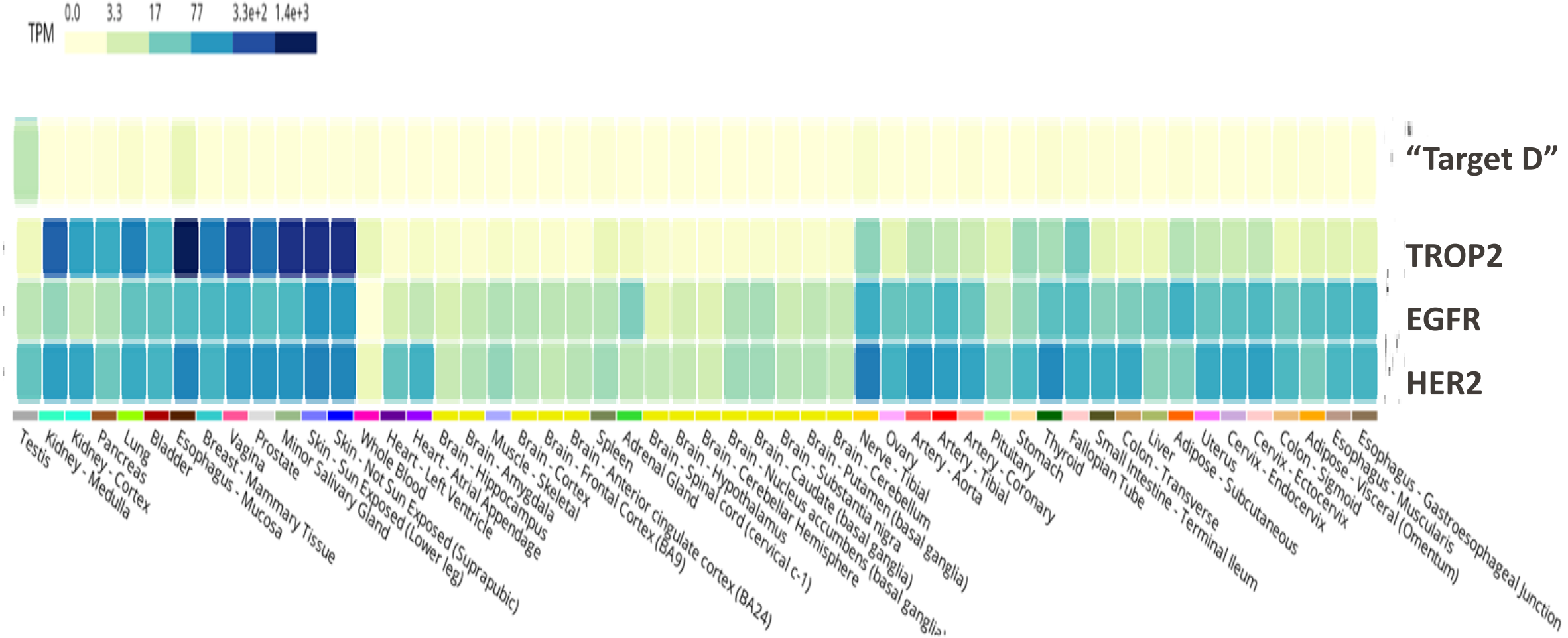
- Cell surface expression - critical for radiopharmaceutical effective mechanism of actions

- Target characteristics:

a. Testis antigens
b. Expressed almost exclusively in the cancer cells;
c. Minimal / no expression in healthy tissues
d. Not currently in development with any modality (targeted therapy, ADC, RLT)

DIFFERENTIATION VS CURRENTLY KNOWN TARGETS

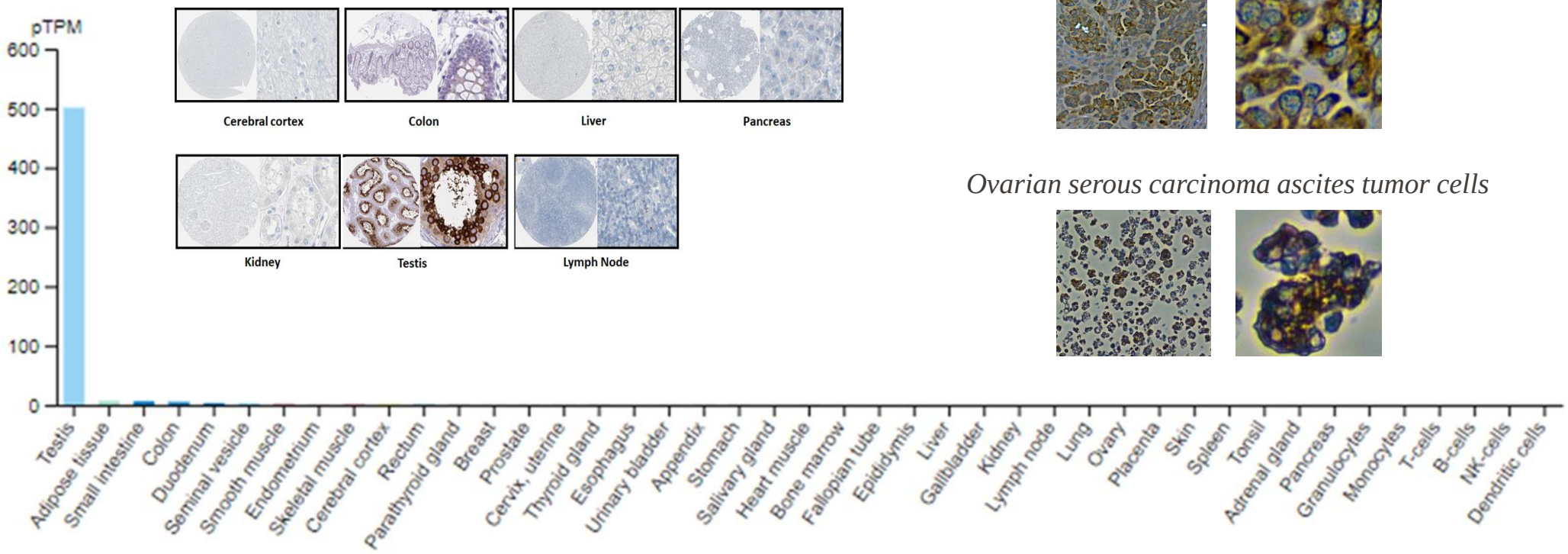
CONSIDERABLY MORE RESTRICTED GENE EXPRESSION IN NORMAL TISSUES



EXAMPLE “TARGET D” IN PRECLINICAL DEVELOPMENT

- Description: Testis antigen
- Expression in normal tissues: largely limited to testis
- Cancer types with surface expression : Highly expressed in TNBC, ovarian, SCLC, gastric

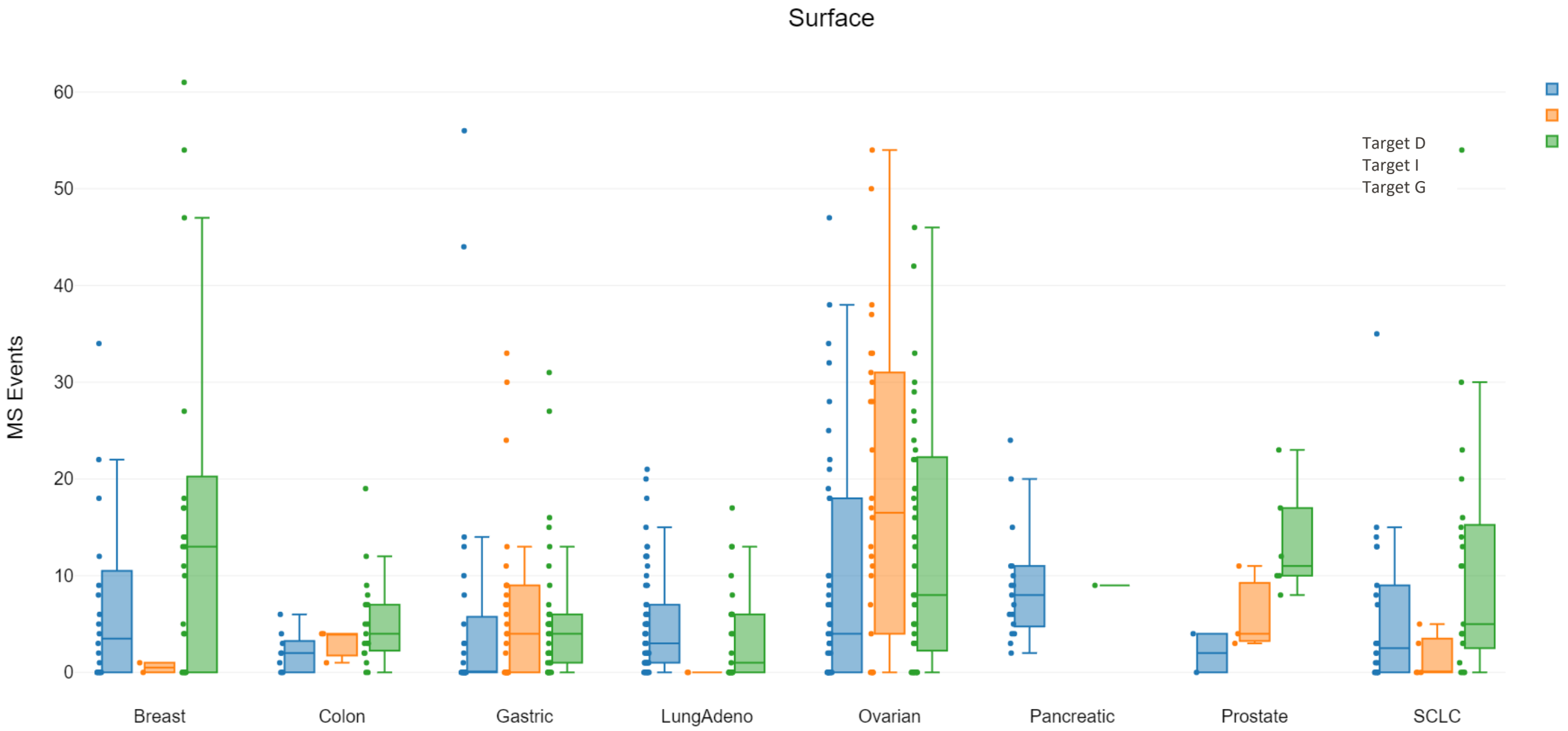
Normal tissues



Ovarian serous carcinoma tumor

Ovarian serous carcinoma ascites tumor cells

MULTI-INDICATION POTENTIAL FOR EACH SELECTED TARGET



RADIOPHARM
VENTURES

A Joint Venture between

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

RAD
RADIOPHARM THERANOSTICS

CONTACT:

RICCARDO CANEVARI

rc@radiopharmtheranostics.com