Fusion Pharmaceuticals Inc.

Wedbush PacGrow Healthcare Conference

August 12, 2020

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This presentation also contains estimates, projections and other information concerning our industry, our business and the markets for our product candidates. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. Unless otherwise expressly stated, we obtained this industry, business, market, and other data from our own internal estimates and research as well as from reports, research, surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources. While we are not aware of any misstatements regarding any third-party information presented in this presentation, their estimates, in particular, as they relate to projections, involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors.

Market data and industry information used throughout this presentation are based on management's knowledge of the industry and the good faith estimates of management. We also relied, to the extent available, upon management's review of independent industry surveys and publications and other publicly available information prepared by a number of third party sources. All of the market data and industry information used in this presentation involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Although we believe that these sources are reliable, we cannot guarantee the accuracy or completeness of this information, and we have not independently verified this information. While we believe the estimated market position, market opportunity and market size information included in this presentation are generally reliable, such information, which is derived in part from management's estimates and beliefs, is inherently uncertain and imprecise. No representations or warranties are made by the Company or any of its affiliates as to the accuracy of any such statements or projections. Projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described above. These and other factors could cause results to differ materially from those expressed in our estimates and beliefs and in the estimates prepared by independent parties.

Experienced Executive Team

John Valliant, PhD
CEO

Centre for Probe Development and Commercialization
(Founder and CEO)

McMaster University

HARVARD

Eric Burak, PhD
CSO

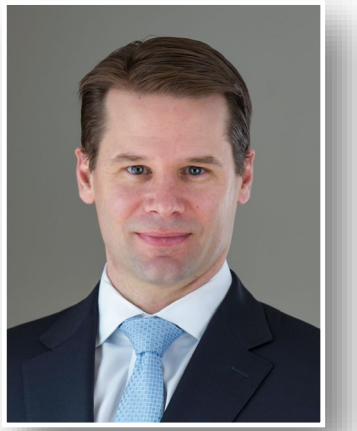
Theracos, Inc.

Rib-X PHARMACEUTICALS

GUILFORD PHARMACEUTICALS

TEMPLE UNIVERSITY

John Crowley, CPA
CFO



Merus

charles river

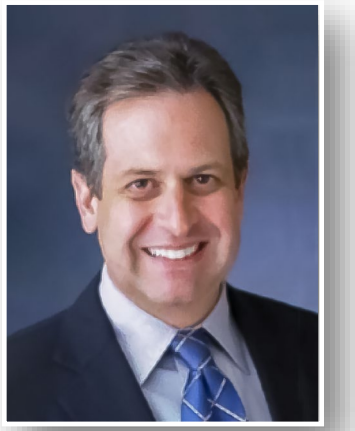
VERTEX

Ironwood

SEPRACOR

BABSON

James O'Leary, MD
CMO



immunogen

Pfizer

BAYER

FDA

Marc Schwabish, PhD
SVP, BD and US Operations

BAYER

Eisai

MERCK

Royal Bank of Scotland

LEERINK SWANN

HARVARD

Creating Next Generation Radiopharmaceuticals for Precision Oncology

- **Precision medicine** approach to radiation therapy, a validated tumor-killing technology
- Lead clinical program **currently in Phase 1** development targeting IGF-1R, showing uptake in **multiple tumor types**
- **Proprietary *Fast-Clear*™** linker technology facilitates faster clearance of non-tumor localized drug, **improving the therapeutic window**
- **Platform technology** can be used with a range of different antibodies and other targeting molecules to enable **pipeline expansion**
- Strong internal **R&D and manufacturing** capabilities and expertise, a barrier to entry into the radiopharmaceutical space that has recently experienced significant M&A and partnering activity

✓ **Potent Therapies** ✓ **Simple Mechanism of Action** ✓ **Platform Technology**

Creating Fusion Pharmaceuticals

2000s

1st Generation Targeted Radiotherapeutics

ZEVALIN®
(ibritumomab tiuxetan)
INJECTION FOR INTRAVENOUS USE
3.2 mg per 2 mL

Effective, however:

- Competing products
- Reimbursement issues
- Difficult to use
- Manufacturing limitations

Opportunity

2008-2016

Build Manufacturing & Research Other Isotopes

cpdc

Created:

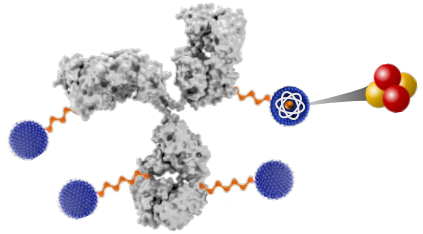
- Linker IP / R&D team
- Lead asset
- GMP manufacturing and distribution
- Data on alphas v. betas

Established

2017-Present

Financing and Launch

Fusion Pharmaceuticals Inc.

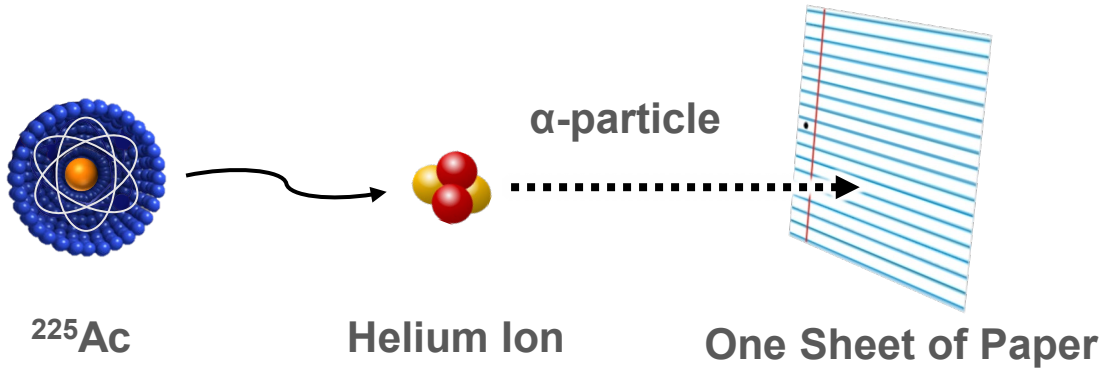


***The* Targeted Alpha Therapy Company**

- Lead asset in clinic
- Established R&D
- Platform technology
- Manufacturing capability & expertise

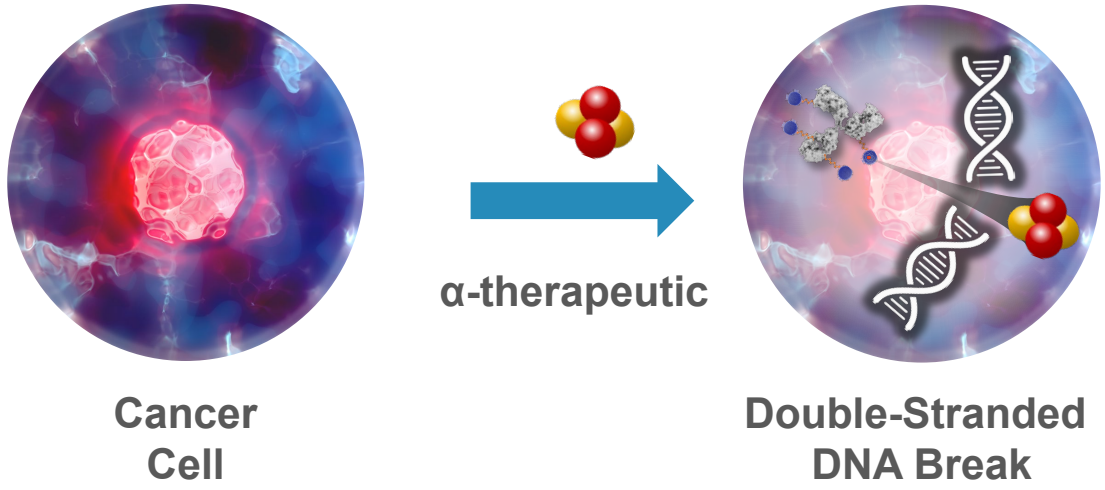
Market momentum: M&A activity, increasing use, product launches

What Are Alpha Emitters?



Properties:

- "Large" and energetic
- Travels a short distance (50-100μm)
- Easy to shield (paper)



Advantages for Cancer Treatment:

- Highly localized massive cell damage
  - No resistance mechanism known to multiple double-stranded DNA breaks
- Comparatively low doses required for cell kill
- Administered intravenously (out-patient)

Alpha emitters have proven to be clinically and commercially viable: e.g. Xofigo

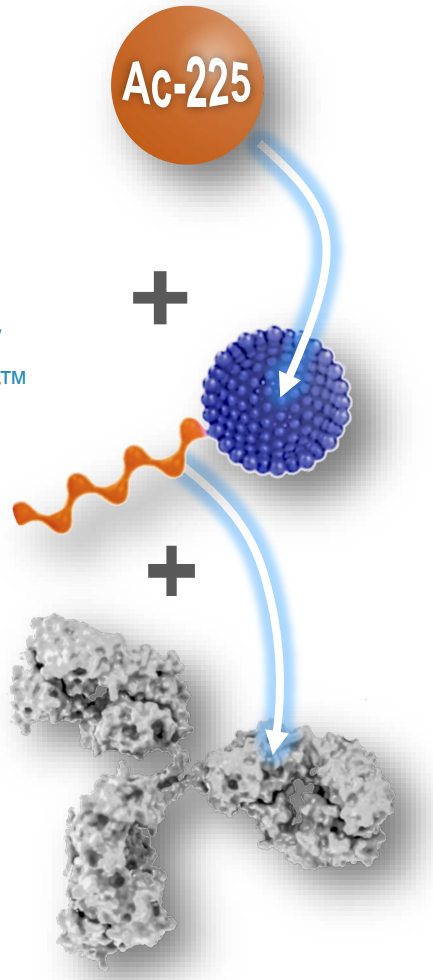
Fusion's Next Generation Radiopharmaceuticals for Precision Oncology

Building Blocks

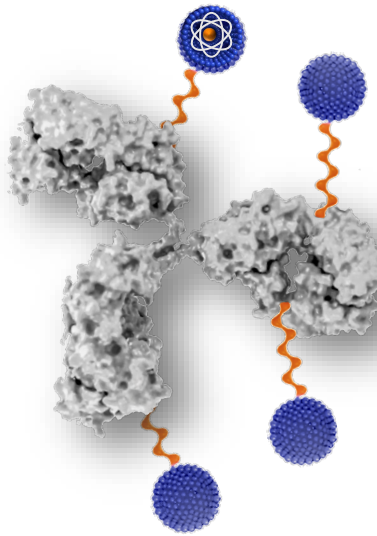
Actinium-225
Alpha-emitting
Isotope

Proprietary
Fast-Clear™
Linker

Proprietary
Targeting
Antibody
As Carrier for
Linker+Ac-225

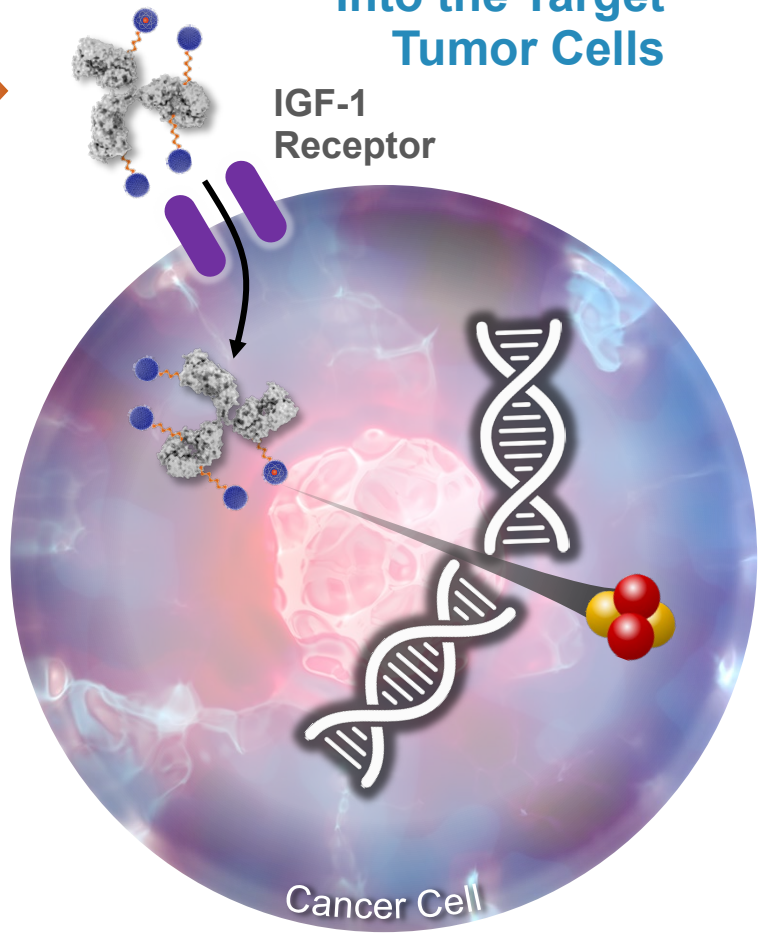


Targeted Alpha Therapy (TAT)



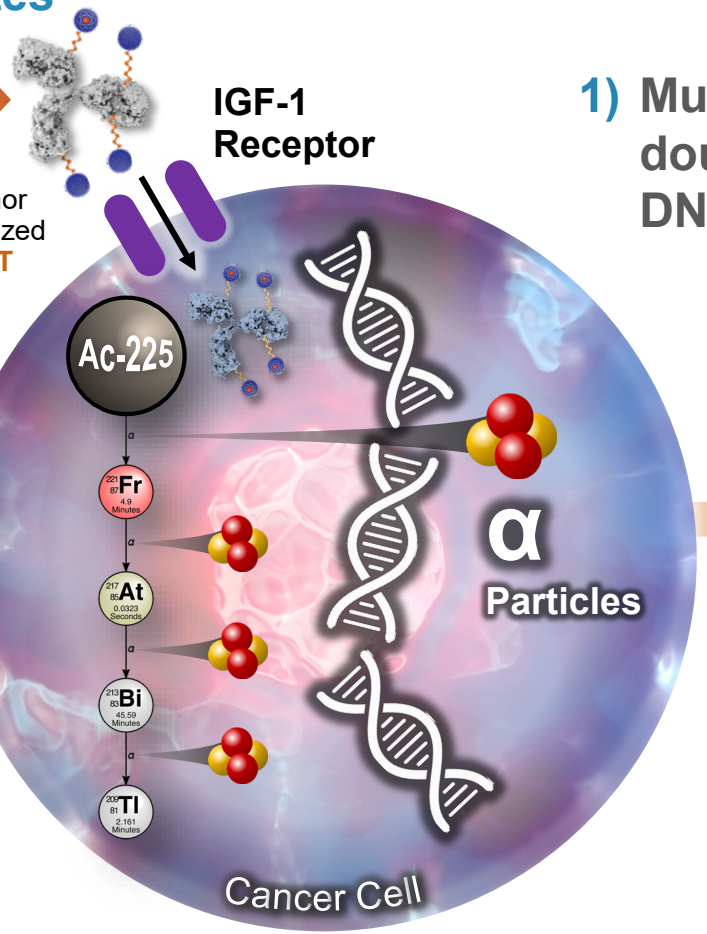
Injectable,
Low Protein
Dose

TAT Penetrates Into the Target Tumor Cells



TATs: Multiple Mechanisms of Action

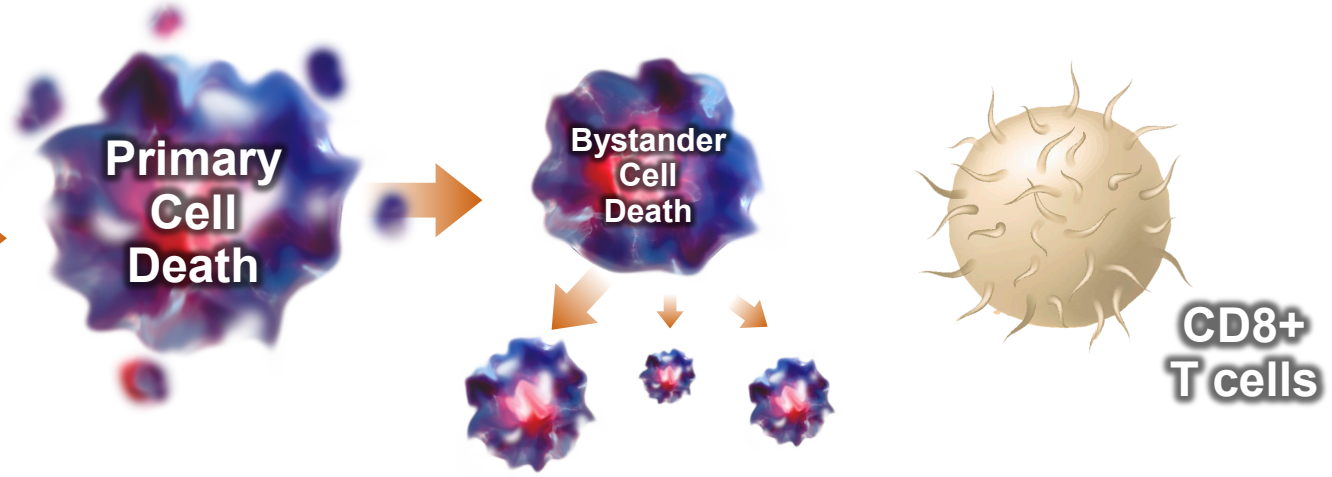
TAT Penetrates Into the Target Tumor Cells



Ac-225 decay yields 4 alpha particles

Multiple Mechanisms of Action of a TAT

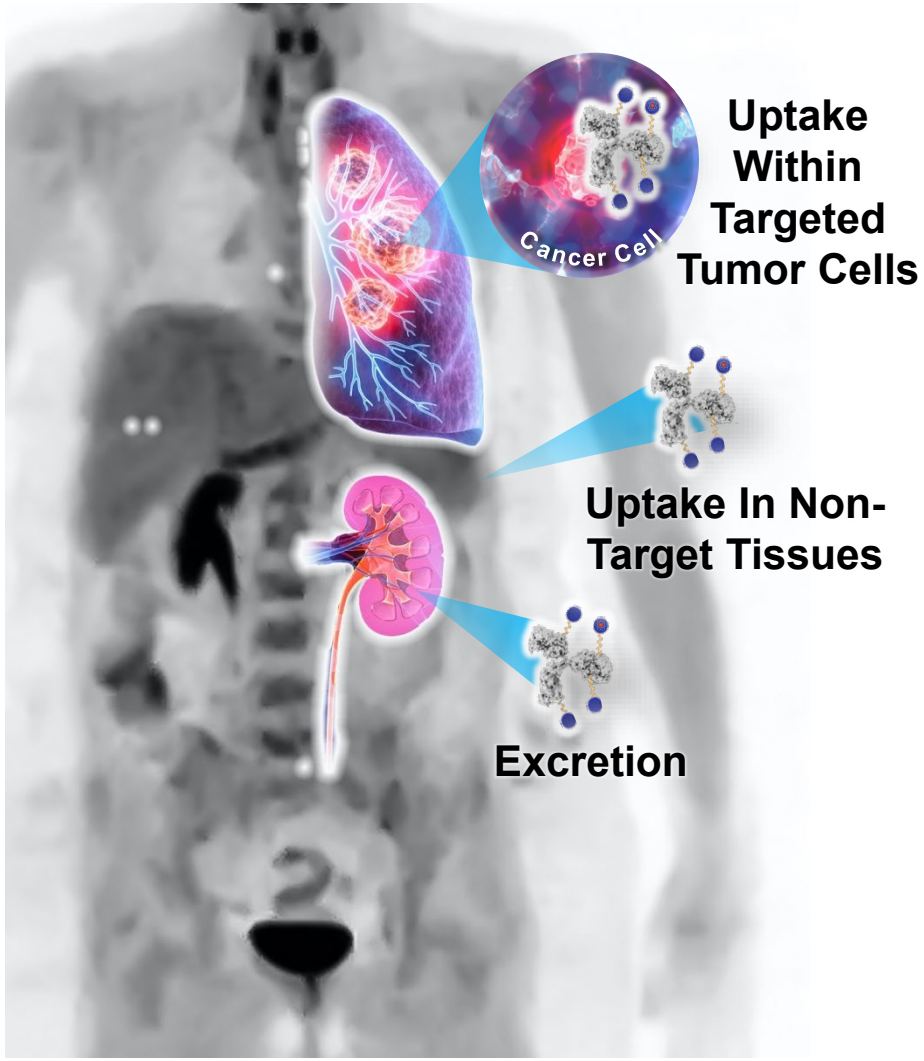
1) Multiple lethal double-stranded DNA breaks
2) Bystander effect
3) Potential vaccine effect



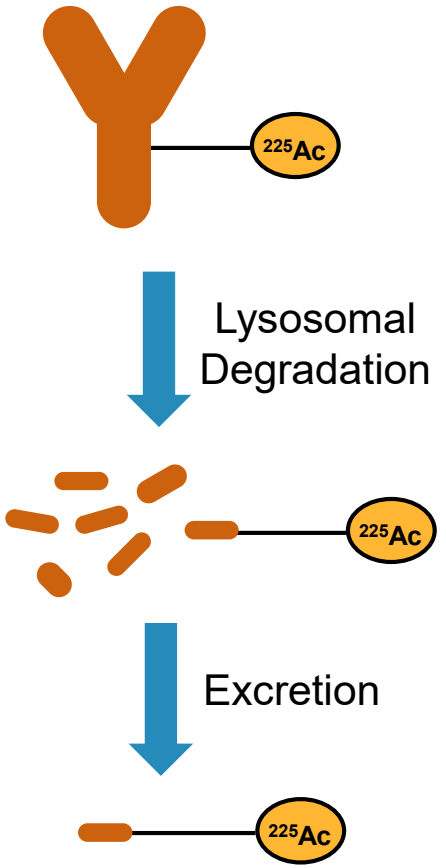
Fusion's research and insights into the underlying biology of alpha emitting radiopharmaceuticals led to the understanding of our TATs' multiple mechanisms of action

Fusion's *Fast-Clear*™ Linker Technology

Fast-Clear™ Enhances TAT Distribution Ratio

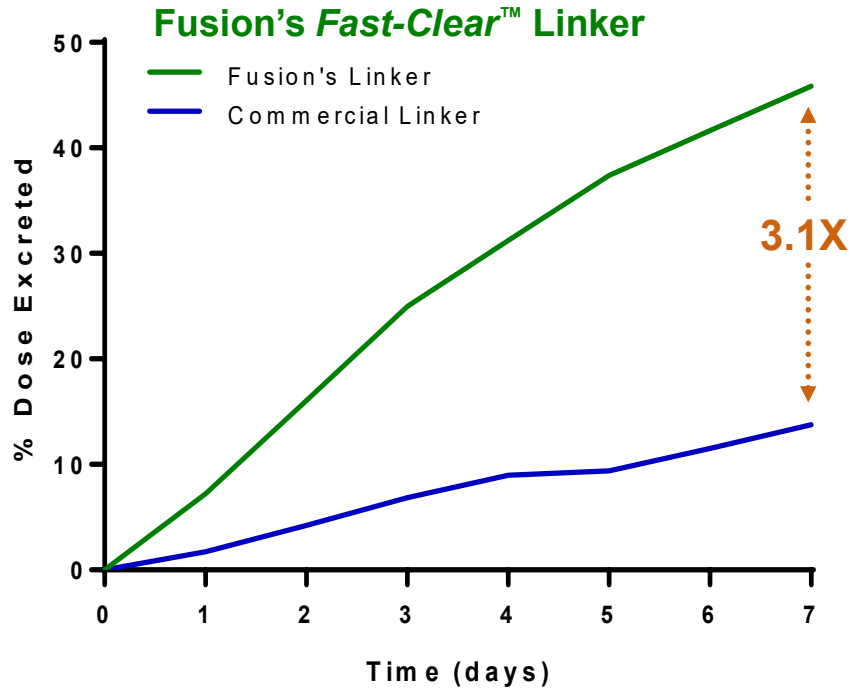


Excretion Process



Fast-Clear™ Linker Enhances Clearance of Non-Tumor Localized TAT in Mice

- ✓ **Same tumor uptake and efficacy**
- ✓ **Faster and improved excretion**



R&D Engine with Rapid Development Capabilities

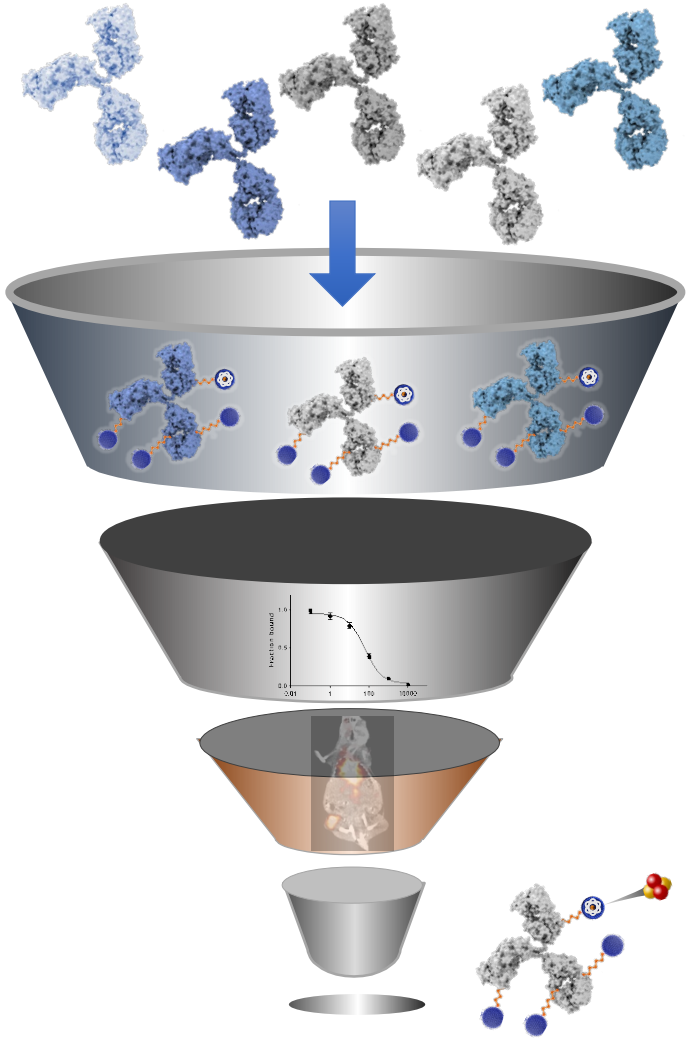
Targeting Molecule Leads

Radiolabel

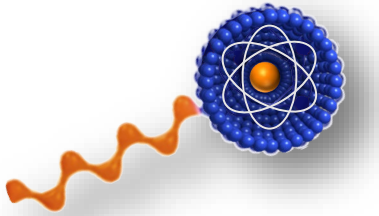
Assess Target Binding in vitro

Biodistribution in Tumor Model

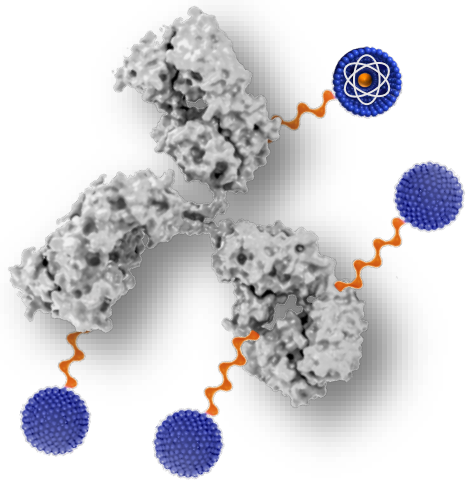
30 Day Efficacy Study



Adding Fusion's Linker Technology promotes rapid excretion and improved therapeutic window



Creates Potent TAT

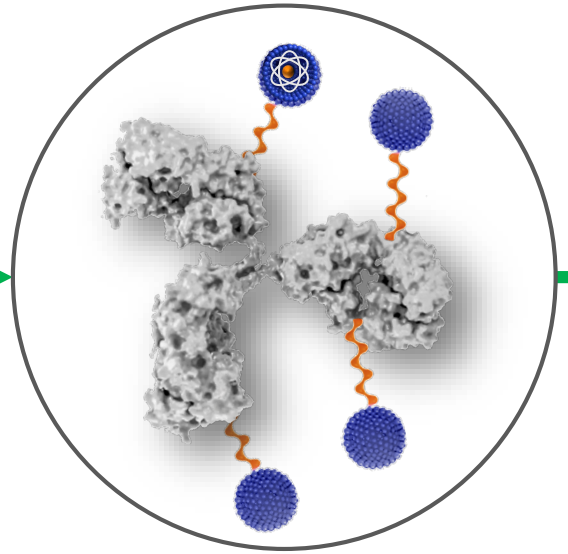


Fusion's platform has shown ability to generate leads in 6 to 9 months

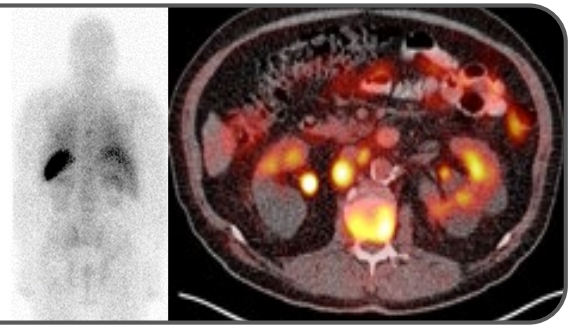
Use of Imaging Diagnostics to Enrich Target Populations

- Imaging analogues of TATs utilize the same targeting molecule and linker
- Replace Ac-225 with imaging isotope, In-111

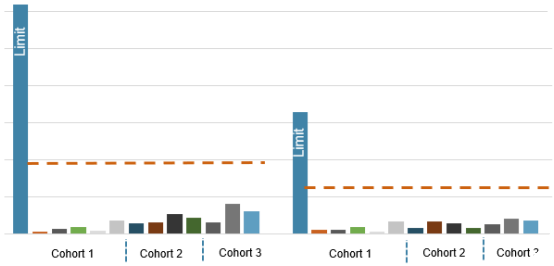
Medical Imaging Analogue



Medical Imaging to Enrich Target Population



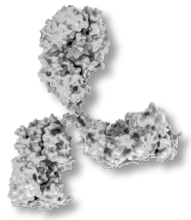
Dosimetry To Assess Safety to Key Organs



Imaging allows assessment of uptake into the targeted tumor and dose to normal organs

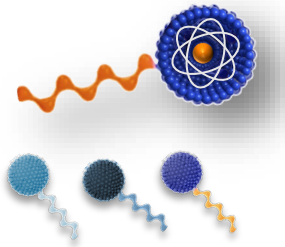
Established Manufacturing Process and Supply Chain
Core Competitive Advantage

Antibody Production



Multiple Sources

Library of *Fast-Clear*™ Linkers



Isotope Production

Ac-225 — Therapeutic Isotope

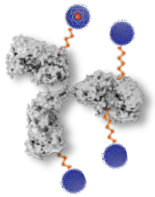
In-111 — Imaging Isotope

Multiple Sources

Radiopharmaceutical Manufacturing

World-class GMP manufacturing

cpdc



CardinalHealth™

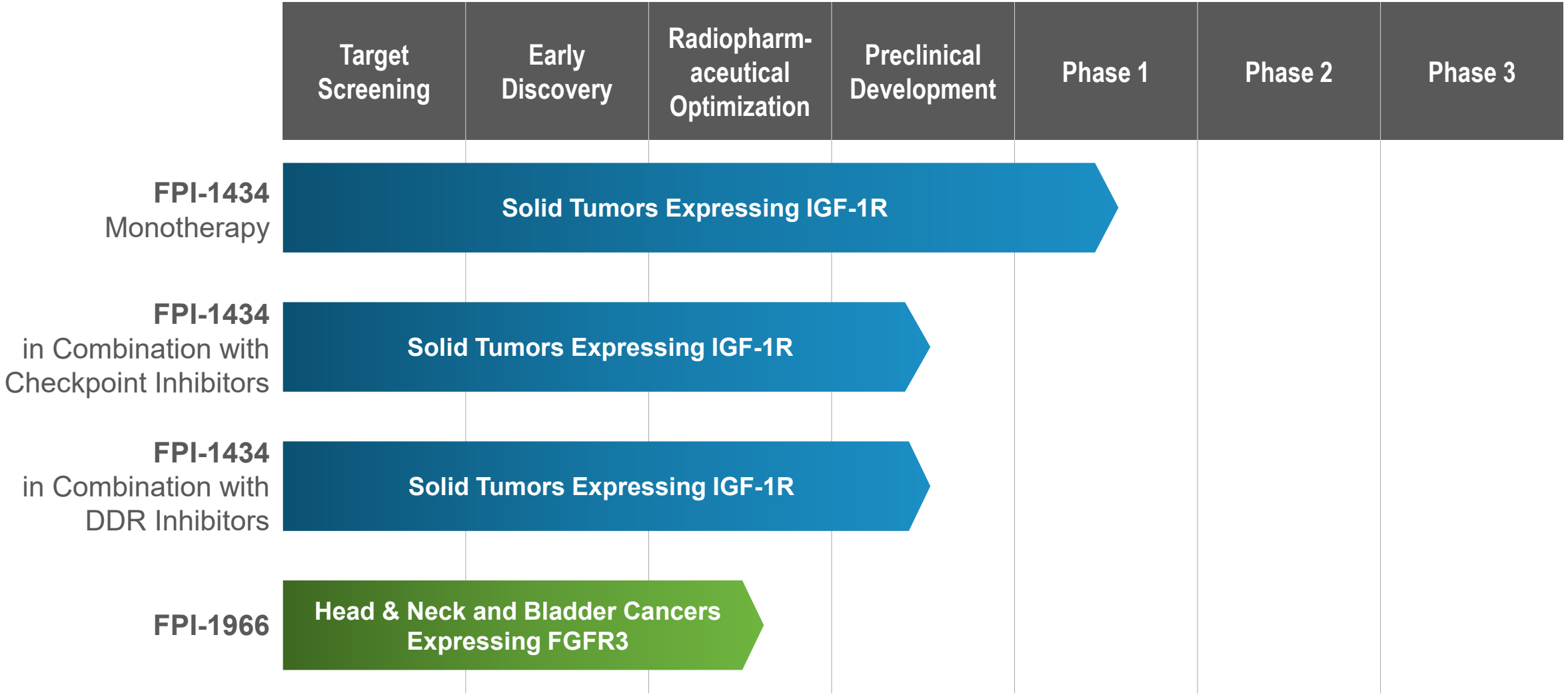
Multiple Sources

Hospitals and Clinics

Standing goals as lead program advances and pipeline expands:

- Continue strengthening supply chain advantage
- Scale manufacturing

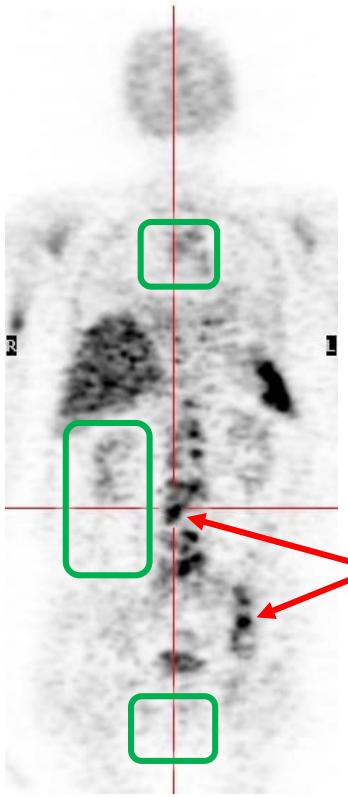
Fusion's Platform and Capabilities Lead to Multiple Development Opportunities



FPI-1434 – Fusion's Lead Program: IGF-1R Targeted Alpha Therapeutic Monotherapy

- **IGF-1R: Ideal alpha therapeutic delivery mechanism**
  - Over-expressed on the surface of cancer cells
  - Low expression on surface of normal tissue
  - Rapidly internalizing receptor to concentrate alpha-particles inside tumor cells
- **MOA: Alpha particle-based cell kill – NOT based on blocking the IGF-1R pathway**
  - IGF-1R is used only to identify and deliver the alpha emitting payload to the tumor
- **Strategy leverages prior investments – toxicology package and antibody manufacturing**
- **Imaging demonstrates uptake in tumors**
- **Fusion converted an IGF-1R antibody with poor clinical efficacy into a therapeutic candidate in less than 1 year**
- **Currently in a dose escalation Phase 1 clinical trial**

Fusion previously showed antibodies can selectively target tumors expressing IGF-1R



PET

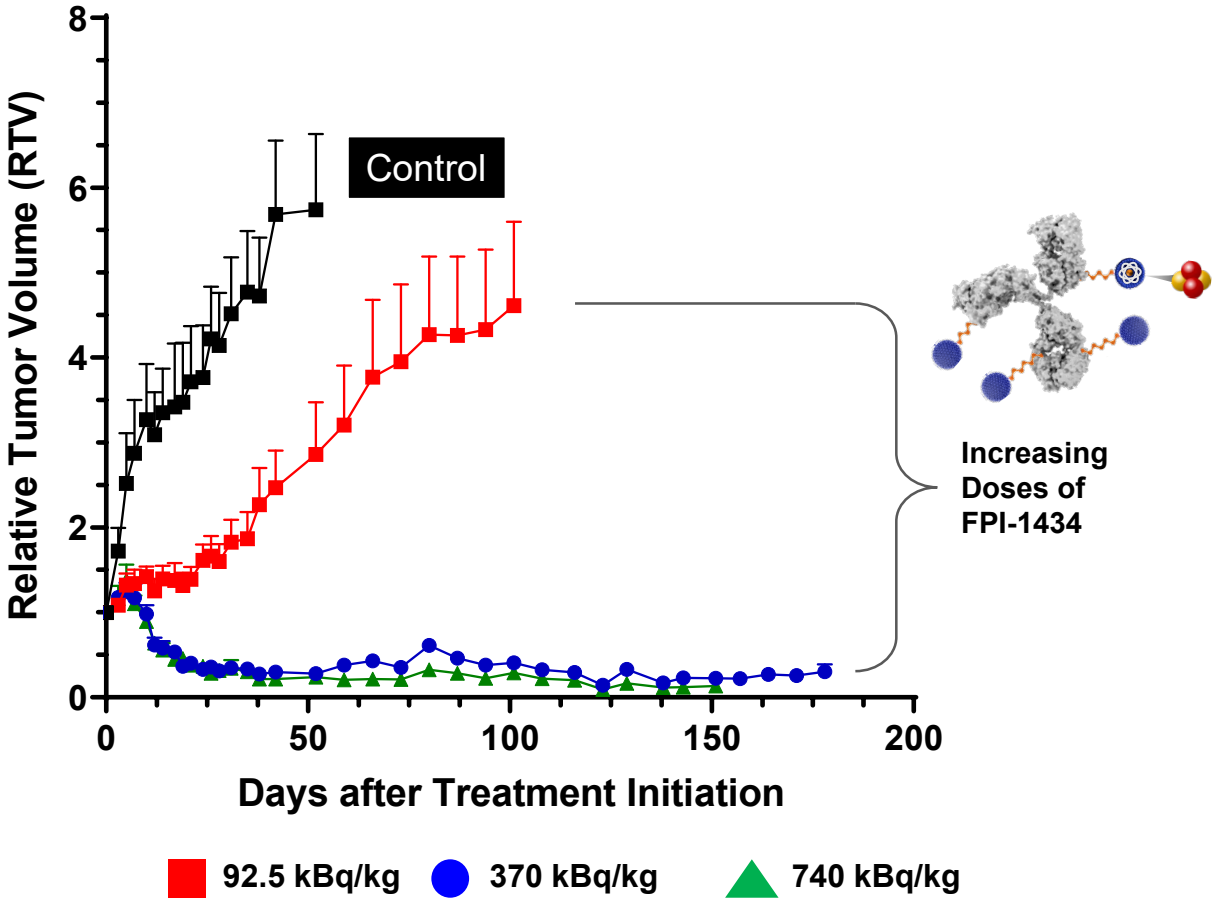
Imaging shows targeted uptake in known metastases with lack of uptake in normal tissue with IGF-1R expression: heart, GI tract, lung, testes

Bone Metastases in Spine & Hip

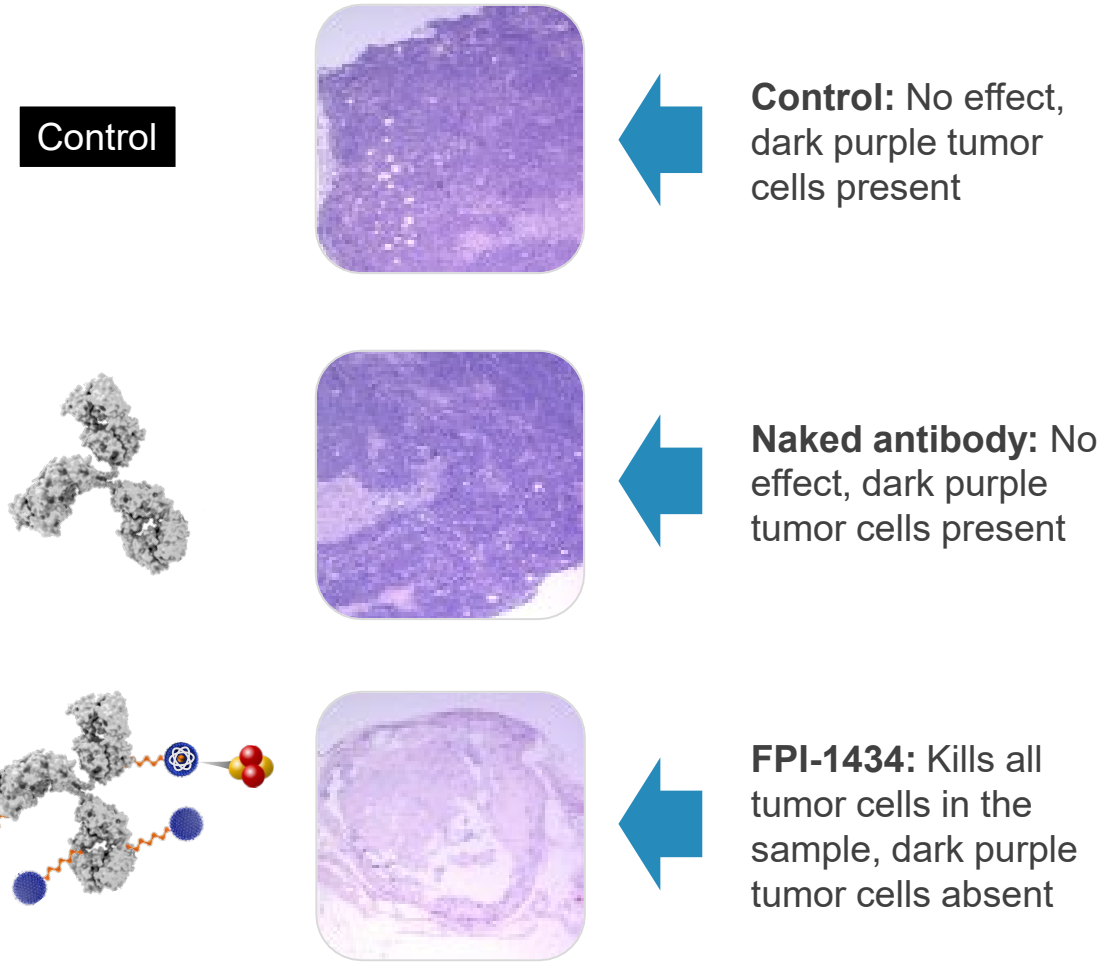
Normal Tissues Expressing IGF-1R

Single Dose Eradicated Tumors in Mice

Single Dose Eradicated Tumors in Preclinical Model
(CRC xenograft mouse model)

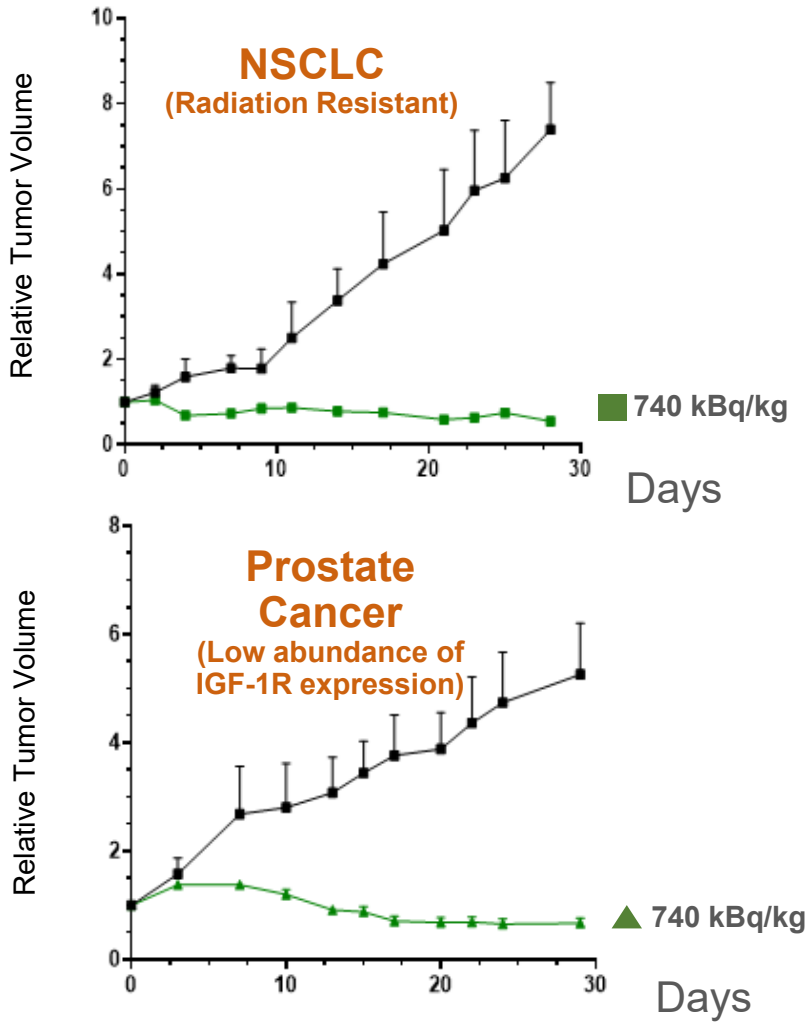


Histological Eradication of Tumors by Pathology
(H&E tumor cell staining following treatment)



Compelling Anti-Tumor Activity Across Multiple Tumor Models and Tumor Sizes

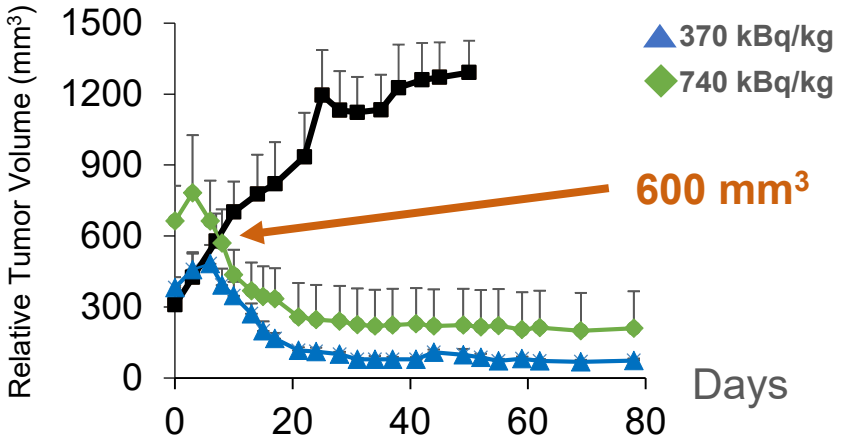
Different Tumor Types



Data Show:

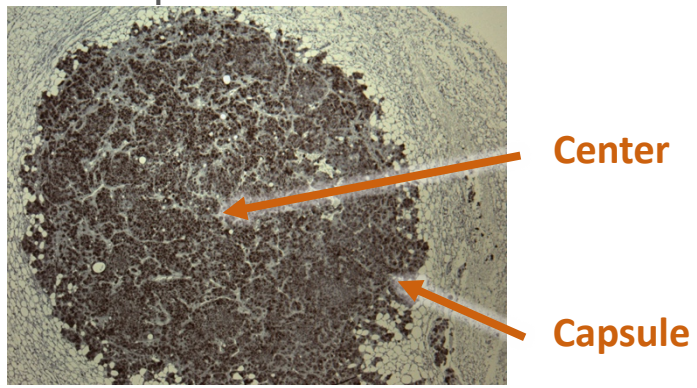
- Ability to **kill tumors of various types with a single dose**
- Ability to **kill both large and small tumors**
- Ability to **penetrate tumor** with alphas using the right targeting agent

Large Tumors



Depth of Tumor Penetration

Black dots represent double-stranded DNA breaks



96 h

Preclinical Toxicology Program

Overview

- FPI-1175 (naked IGF-1R antibody) – single and multiple dose studies
- Dosimetry study with imaging form of FPI-1434
  - Assesses radiation organ exposure to normal tissue
- Dose range-finding study with FPI-1434
- GLP late radiation toxicity study with FPI-1434 (IND-enabling study)

Findings

- The dose limiting toxicity is myelosuppression, which is reversible
- No evidence of toxicity to kidney, bladder, intestines, or lung
  - FDA approved FPI-1434 IND without the need to give Spironolactone to protect against potential kidney toxicity

Preclinical data supported moving in to Phase 1 trial

FPI-1434 – Overview of Clinical Trial and Timelines

Phase 1
Single-Dose

Imaging, dosimetry, safety and response data

- ✓ Single-Dose Cohorts Now Complete
- ✓ Safety Review Committee Meeting Planned

Received Notice from FDA & Health Canada that Multi-Dose May Begin

+9-18 months from start

Phase 1
Multi-Dose

Data for Multi-Dose Treatments:
Imaging, dosimetry, safety and response data
Recommended Phase 2 dose and regimen

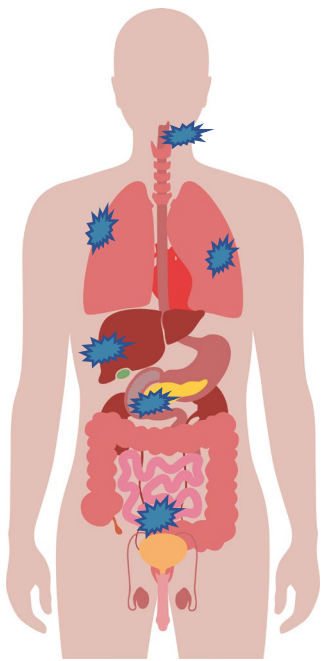
Phase 2a Study Initiation
Simon 2-stage design in 2-3 cohorts

- Phase 1 multi-dose portion assumes 42 day DLT observation period
- Variability in clinical trial duration attributable to timing of potential DLT observations

Timeline assumes no further interruptions related to COVID-19 pandemic

IGF-1R Is Over-Expressed On Multiple Tumor Types

Target Broadly expressed in tumor cells

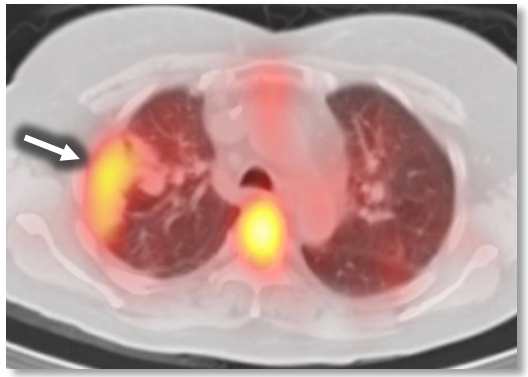
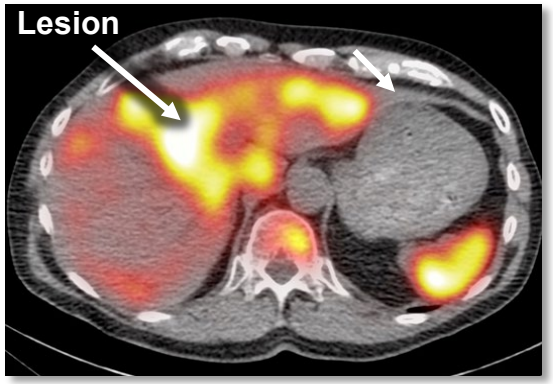
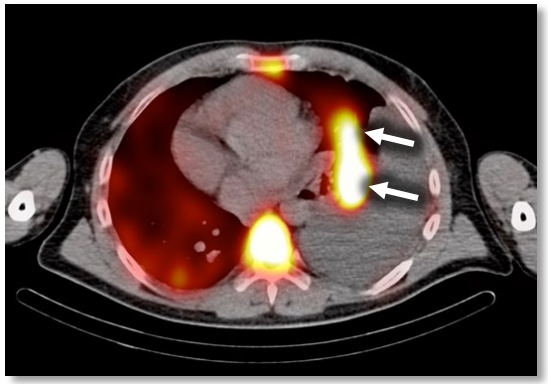
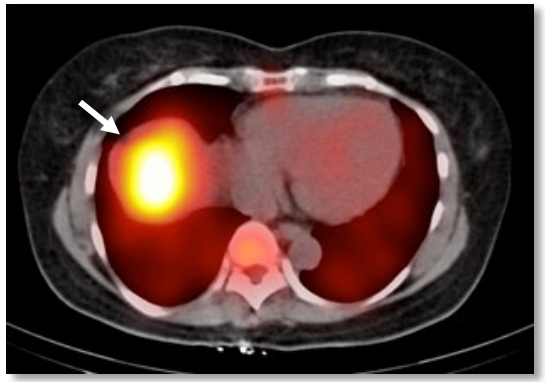
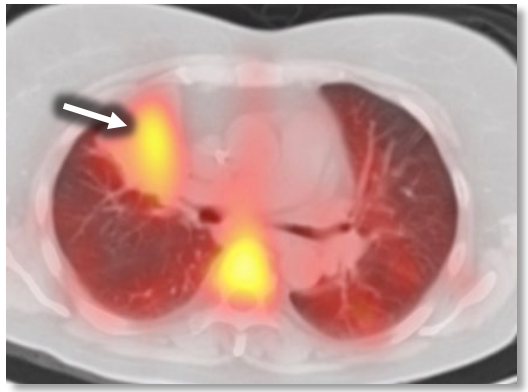
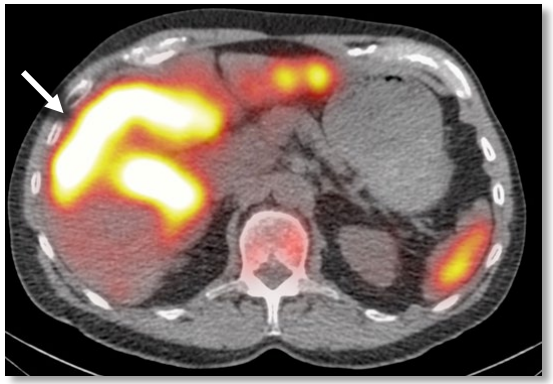
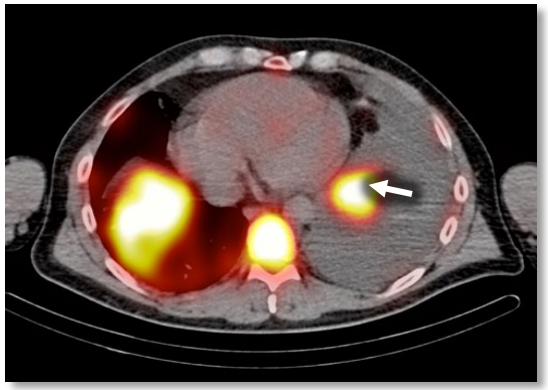
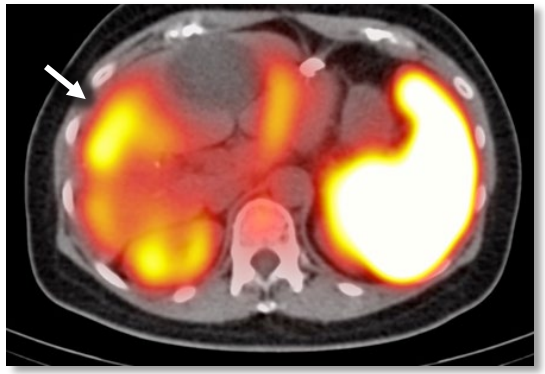


	% Patients with IGF-1R Expression
Ovarian	100%
Bladder	100%
Sarcomas	90%
Head and Neck	62%
Prostate	62%
NSCLC	59%
Pancreatic	57%
Colorectal	50%
Liver	50%
Breast	47%
Small Cell Lung	43%
Esophagus	40%
Renal	36%
ACC	36%

A multi-tumor targeted radiopharmaceutical with potential for broad clinical utility

Tumor Uptake Has Been Observed In Different Types of Solid Tumors

Phase 1 Trial SPECT Imaging of Four Patients with Different Cancer Types (Transaxial Views)

Ovarian Pt # 204-007	Prostate Pt # 202-008	Sarcoma Pt # 204-002	CRC Pt # 204-008
			
			

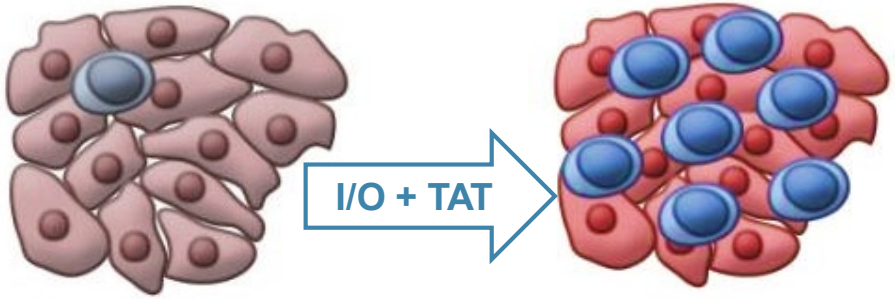
Cohorts 1 and 2: Safety Summary (March 4, 2020)

- Both the imaging analog (FPI-1547) and FPI-1434 have been generally well tolerated
- No dose limiting toxicities or serious adverse events related to study drug
- No related Grade 3 / 4 adverse events
- No reported adverse events of hyperglycemia or hypoglycemia
- No clinically significant findings suggestive of renal impairment

FPI-1434 Combination Therapy Programs

Immuno-Oncology

Turning I/O "resistant" tumors into I/O "sensitive"



Immune desert
"cold tumor"

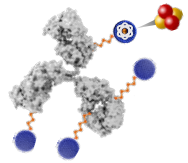
Immune responsive
"hot tumor"

Enhancing antigen presentation and stimulating T-cell recruitment: "Radiation Activation and Vaccination"

DNA Damage Response Inhibitors (e.g., PARPi)

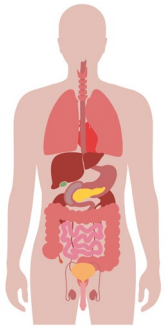
FPI-1434 = DNA Damage : DDRis Prevent DNA Damage Repair

Current Market: DDRi Monotherapy



DDRi Future Market: Expanded with FPI-1434

DDRi + TAT



- NSCLC
- Breast
- HCC
- Colorectal
- Prostate
- H&N
- Recurrent Thyroid
- Pancreatic / NETs
- Adrenocortical carcinoma
- Sarcomas

Combination expands accessible indications and reduces required doses

Utilize synergies with leading therapies to potentially move FPI-1434 up in the treatment paradigm

Fusion has patent applications filed on combination therapies

Fusion is Pursuing a Range of Opportunities to Build the Pipeline

TAT Clinical Combination			New Targeting Strategies		New Programs
I/O	*DDRi Market*	*DDRi Novel*	*Protein Platform*	*Payload Carrier*	*Sourcing Targeting Molecules*
PD-1/ CTLA4/etc. (abscopal effect)	PARP	ATM, ATR, DNA-PK, etc.	Small molecules, camelids, nanobodies, others	Chelates/linkers and enhancement of PK and other properties	Novel, existing (discontinued or LCM), single or multi-asset in-licensing/partnership

Building a pipeline with new assets, clinical combinations and technologies

FPI-1966: Targeting Fibroblast Growth Factor Receptor 3 (FGFR3)

Rationale

1) **FGFR3 is a validated cancer target** that is overexpressed on bladder and H&N cancers
   - FDA approved a pan-FGFR inhibitor for the treatment of bladder cancer with genetic alterations (i.e., translocation mutation)
2) **Potential clinical advantage:** An FGFR3-TAT may be more efficacious given the potency/MOA of a TAT
3) **Larger patient population / new indications:** Kinase inhibitor can only pursue mutations that cause cancer while a TAT can pursue the causative and/or correlative mutations of a cancer

Fusion's Approach

- An FGFR3-targeted TAT can address both driver and passenger mutations to deliver lethal radiation to the tumor
- Fusion acquired Vofatamab (naked anti-FGFR3 mAb) for conversion into a TAT
  - Vofatamab previously demonstrated good safety and tolerability in clinical trials in approximately 140 patients, most with advanced bladder cancer

Next Steps:

- Fusion will apply its refined process used with FPI-1434 to Vofatamab development

Financial Highlights

- **$212.5M gross proceeds** from June 2020 IPO of 12.5M shares at $17.00
- **$62.5M gross proceeds** from May 2020 Series B regulatory milestone

$318.9M Cash
as of 6/30/20

Expected to fund operations into **2024**

Future Key Milestones by Program

Milestone	Timing*
FPI-1434 Mono	
• Phase 1 Single Dose Safety & Imaging Data	Q4 2020
• Initiation of Multi Dosing	Following Safety Review Committee meeting
• Phase 1 Multi-Dose Data	9 – 18 months following commencement of multi dosing
FPI-1434 Combo Studies	6 – 9 months following RP2D in monotherapy
FPI-1966	
• IND Submission	6 – 12 months after preclinical activities fully resume

*Timelines assume no additional disruptions of pre-clinical or clinical activities resulting from the COVID-19 pandemic

Fusion Pharmaceuticals Inc.

Thank You

www.FusionPharma.com