SmRT™ THERANOSTICS

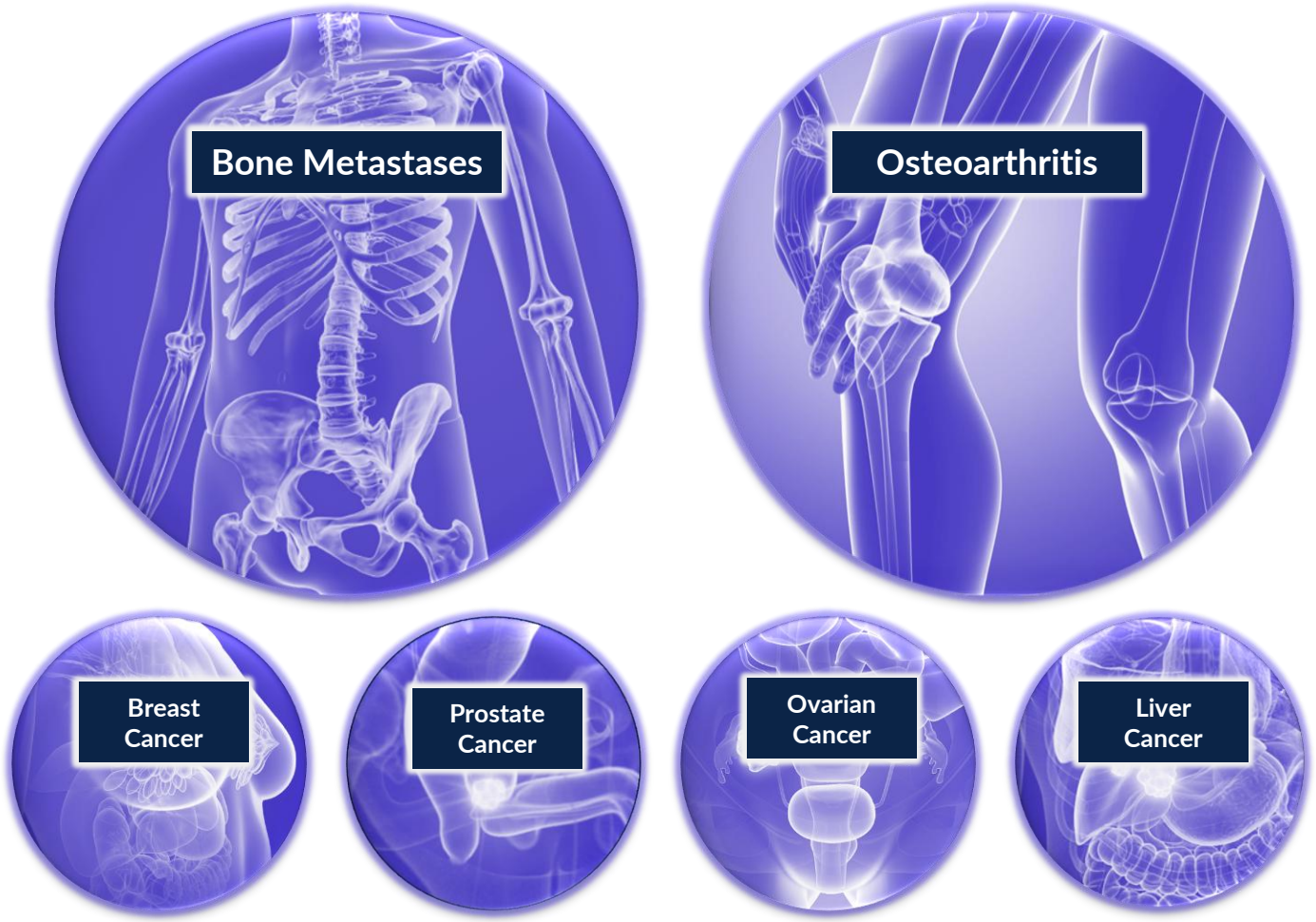
One Isotope - One Vial - One Platform

Sn-117m Radiotherapy (SmRT™):

See-Treat-Confirm Model—
Image-verified Precision

For Multiple Cancer &
Pain Indications

serene



A clinic-ready, radiotherapy Dx and Rx for oncology and pain management.

The SmRT Platform:
One Isotope. One Vial. Multiple Indications.

Serene's SmRT platform enables See-Treat-Confirm (STC) precision.

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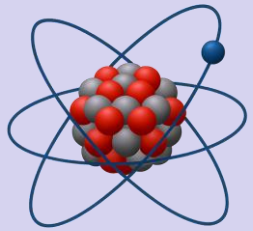
One Isotope



Sn-117m

One Vial

SmRT Advantages

Targeted Delivery
290 µm range (*~15 cell layers*) can more actively target cancer cells while sparing healthy tissue

13.9-day Half-Life
Increases dosing flexibility and therapy window with simplified logistics

Simplified Manufacturing
Flexible reactor or accelerator production with proven streamlined logistics

"Goldilocks" Energy Profile
Optimizes the treatment range between α-emitters (*e.g., Xofigo®*) and β-emitters (*e.g., Pluvicto®*)

Single-Agent/Built-in Imaging
SPECT-ready (159 keV gamma photons) enables Dx and Rx verification – **STC Model.**

Ease of Use/Minimal Toxicity
No facility shielding required and minimal special handling (no radioactive daughters); low toxicity

Clinical Readiness & Validation in Oncology and Osteoarthritis

FDA Active IND *Bone Met Pain*

Health Canada — No Objection Letter for OA

NIH National Cancer Institute — $90M+ CRADA in Bone Mets

DMF, CMC, Investigator Brochure

100+ Human subjects completed

4K+ Canine OA injections completed

0 Related Serious Adverse Events in Cancer & OA

Commercial Supply Chain Validation

JIT — Just-in-time Manufacturing & Logistics

100+ GP vet clinics NRC licensed & onboarded

35 U.S. States Shipped

Intellectual Property

26 Patents & Trade Secrets

The SmRT Team:

Proven leadership in radiotherapy, medical device commercialization, and oncology drug development.

Immanuel Thangaraj
Co-Founder, Chief Executive Officer

- 30+ years of experience starting and building companies.
- Former Managing Director at EW Healthcare and former Associate at ARCH Venture Partners.
- Founder or led investment in numerous successfully exited biopharma, medtech, and healthcare IT companies.

MBA, University of Chicago
AB, University of Chicago

Art Collins
Senior Advisor

- 30+ years of management and consulting experience in the medical device industry.
- Former CEO/Chair of Medtronic, Corporate VP of Abbott Laboratories,
- Former Board of Directors at Alcoa, Cargill, Tennant, Arconic, Boeing, and US Bancorp.

MBA, University of Pennsylvania
BS, Miami University

Gilbert Gonzales
Co-Founder, Chief Medical & Innovation Officer

- 30+ years of experience as serial entrepreneur, neurologist and inventor.
- Founded/co-founded Prism Pharma, Clear Vascular, NeuroSn, and Exubrion Therapeutics.
- Author of multiple Sn-117m publications and patents.

MD, University of Arizona
BS, University of Arizona

Nigel Stevenson
Co-Founder, Chief Technical Officer

- 30+ years of isotope production and radiopharmaceutical R&D experience.
- Co-founder, COO of Exubrion Therapeutics.
- Former management roles at TcNet, Trace Life Sciences, Theragenics. Founding member & past President, World Council on Isotopes.

PhD, University of London, UK
BS, University of London, UK

Nancy Lane
Advisor Board Co-Chair

- Distinguished Professor of Medicine & Rheumatology, UC Davis.
- President Elect, OARSI.
- International leader in OA clinical trials.
- Intl. Osteoporosis Foundation Lifetime Achievement Award; Master, American Colleges of Rheumatology and Physicians; National Academy of Medicine; National Academy of Inventors.

MD, University of California, SF
BS, University of California, Davis

Jim Taylor
Chief Operating Officer

- 25+ years of CEO/President roles at industry-leading medical device companies.
- Global leadership for Ohmeda Medical, Coherent Medical, Zeiss Meditech.
- Former CEO of Oraya Therapeutics, inventor of novel X-ray therapy to treat AMD.

MBA, Johns Hopkins
BS, U.S. Naval Academy

Terry Plasse
Chief Clinical Development Officer

- 30+ years of experience in drug and biologic development.
- Former Director, Oncology for North America, Rhône-Poulenc Rorer and consultant to AstraZeneca, Bristol-Myers Squibb, Chiron, and Merck.

MD, Washington University
AB, Brandeis University

Jennifer Kirk
Financial Advisor

- 25+ years of experience in finance, operations, and strategy.
- CEO of Exubrion
- Former SVP, Global Controller & Chief Accounting Officer of Medtronic.
- Former SVP of Integration & Value Capture, VP & Principal Accounting Officer of Occidental Petroleum.

MBA, Cal State, Bakersfield
BA, UC Santa Barbara

Sanjit Tewari
Clinical Advisor

- Director of Translational Radiopharmaceutical Development at MD Anderson Cancer Center.
- Leads precision radiochemistry and molecular imaging initiatives, integrating diagnostic and therapeutic isotopes into next-generation oncology programs.

MD, University of Michigan
BS, University of Michigan

Ralph Weichselbaum
Advisor Board Co-Chair

- Chair, Radiation & Cellular Oncology, University of Chicago
- Co-director, Ludwig Center for Metastasis Research
- Co-originator of Oligometastatic Paradigm, defining the link between local control & systemic disease outcomes.
- National Academy of Medicine, ASTRO Gold Medal, Giants of Cancer Care® Award, and ASCO Karnofsky Award.

MD, University of Illinois, Chicago
BS, University of Wisconsin

Partner Ready Across Multiple Disease Categories

20+ years of R&D · $100M+ Invested · Validated in 100+ humans.
Two clinical-stage programs planned for 2026, with active IND/CTAs and Validated FIM Mechanisms

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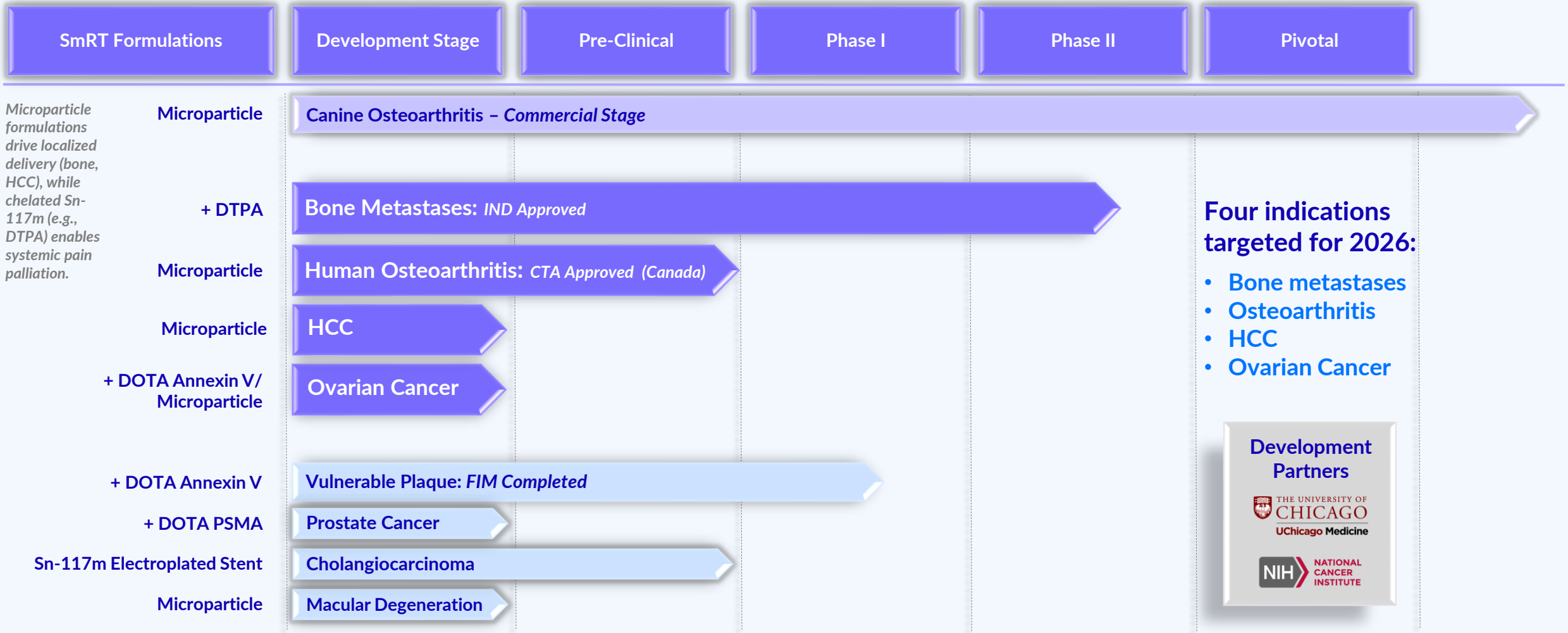


Four indications targeted for 2026:

- Bone metastases
- Osteoarthritis
- HCC
- Ovarian Cancer

Development Partners

THE UNIVERSITY OF CHICAGO
UChicago Medicine

NIH NATIONAL CANCER INSTITUTE

Application #1: STC Innovation in Breast Cancer

Bone metastasis is the single most common cause of cancer-related pain and cause fractures and nerve damage that impact QOL.[1,2]

The pain is often described as a sharp, tingling, burning, or shooting pain…can lead to loss of mobility, impacting quality of life."

susan g. komen.

70% Of metastatic breast cancer patients develop bone metastases.[3]

120K Women in the U.S. endure breast cancer bone metastasis pain.[4]

40 - 50% Of patients with cancer pain are undertreated.[5]

Current Treatment Gap

- Opioids carry systemic risks
- External Beam Radiation (EBRT) is burdensome with lower response rates (~ 60% vs. SmRT's 75%)

~$1B+ Peak US Annual Revenue Potential [6*]

** Excludes other metastatic cancers (lung, prostate, etc.).*

The SmRT See-Treat-Confirm (STC) Solution

- Selectively targets high turnover sites (Sn-117m is a calcium mimetic/bone seeker):
  - Bonds to areas of rapid bone remodeling (metastases).
  - Induces apoptosis within recruited inflammatory macrophages, osteocytes, and malignant cells.
- Conversion electrons' 290µm-range spares nearby healthy bone marrow,
- Gamma photons enable imaging for dosimetry and response calculation.

1. The American Cancer Society and Cleveland Clinic, *Bone Metastasis Signs & Treatment*, 2024
2. *Adapted from American Cancer Society and National Comprehensive Cancer Network.*
3. Coleman, R.E. *Clin Cancer Res*, 2006; confirmed by *Joint Dis Rel Surg*, 2023.
4. Source: Susan G. Komen® (70% of the 170,000 women in the U.S. living with metastatic breast cancer in 2025)
5. Source: NIH, "Prevalence of Undertreatment in Cancer Pain" (Annals of Oncology)
6. 120K Patients x 50% penetration x $11K price (benchmarking approved bone-targeted radiopharmaceuticals) x 1.5 treatments/yr

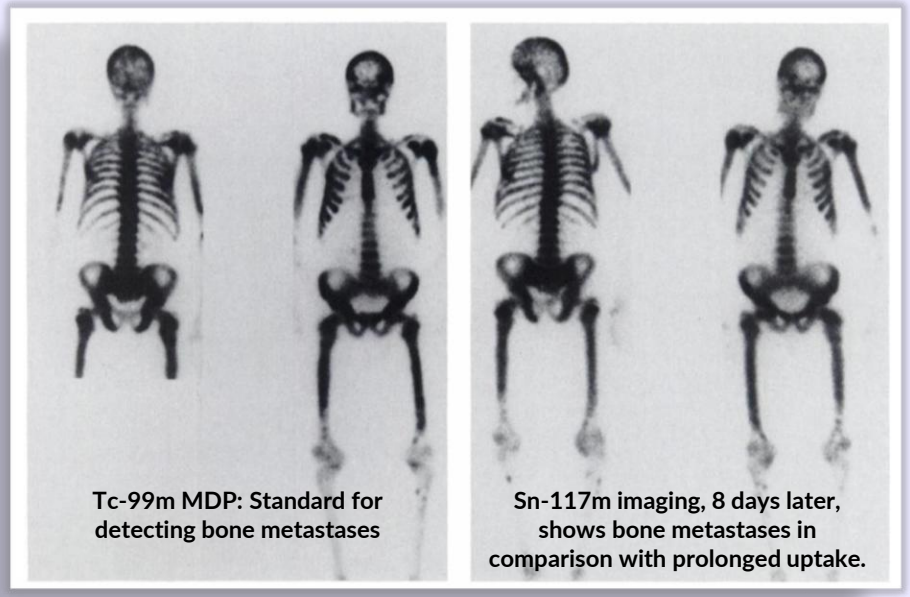
susan g. komen. *"You should never feel you have to endure the pain."*

Human Data: Image-Verified Pain Palliation with Minimal Toxicity

Validated STC model in metastatic bone disease demonstrates high efficacy and safety

SmRT's *See-Treat-Confirm* can establish a new benchmark in theranostic precision medicine.

Planar Imaging: Pilot Study Data[1]



Tc-99m MDP: Standard for detecting bone metastases

Sn-117m imaging, 8 days later, shows bone metastases in comparison with prolonged uptake.

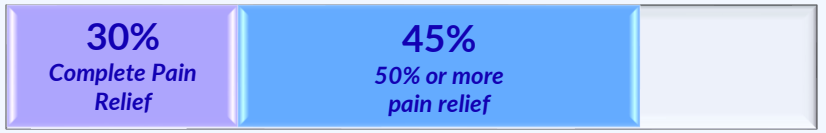
- **Matches Tc-99m quality:** Precise imaging with extended half-life.[2]
- **Verified Targeting:** Selective uptake confirms active metastases.
- **True Theranostic:** Single-agent enables diagnosis (Dx) and therapy (Rx).

See the pain **Treat the pain**

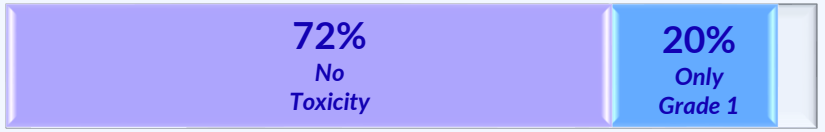
Therapy: Phase 1/2 Study Data[3]

Enrolled 47 patients with prostate, breast, lung, and other cancers with known bone metastases

75% of Patients (vs. 60% for EBRT) had "50%+ Pain Relief" [4,5]



92% of patients had no or limited toxicity [4,6]



1. Atkins, H. L., et al., "Tin-117m DTPA for palliation of pain from osseous metastases: a pilot study." *Journal of Nuclear Medicine*, 1995.
2. Sn-117m scans of breast cancer patients with bone metastases are available upon request.
3. Srivastava, S.C., & Lister-James, J. (1999). *Tin-117m DTPA, A Radiopharmaceutical for the Treatment of Cancer-Related Bone Pain* (Technical Report No. OSTI ID: 770452). U.S. Department of Energy.
4. Of the 47 patients enrolled, 40 patients had complete data sets.
5. Tseng, Y. D. "Radiation Therapy for Painful Bone Metastases." *Radiotherapy & Oncology*, 2023.
6. No thrombocytopenia was observed (platelet counts remained within normal limits). Two patients had Grade 2 neutropenia; one patient had Grade 3, and none had Grade 4.

STC Radiotherapy Improves Care and Expands Access with Existing Infrastructure

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Clinically and Commercially Validated Advantages vs. Current Radiotherapies & Ready for Clinical Trials

Current Hospital-based Therapies

- **Blind Delivery:** No real-time verification of delivery.
- **Complex Logistics:** Requires separate imaging tracers & hospital shielding.
- **Dose-Limiting:** Side effects limit re-dosing options.
- **Limited Access:** Limited to major hospital centers.

Xofigo® radium Ra 223 dichloride injection

PLUVICTO™ lutetium Lu 177 vipivotide tetraxetan INJECTION FOR INTRAVENOUS USE

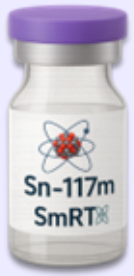
LUTATHERA® (lutetium Lu 177 dotatate) injection, for intravenous use

EMBOZENE MICROSPHERES

Next Generation Clinic-based Theranostic for Breast Cancer Care

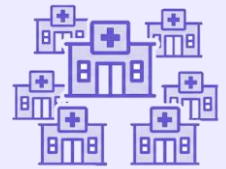
- **Image-verified:** SPECT confirms dose and distribution instantly.
- **Simple Logistics:** No facility shielding required; centralized distribution.
- **Superior Safety:** Minimal toxicity allows for re-dosing & combination therapy.
- **Expanded Access:** Opens up 1,000+ community clinics *(current SPECT installations)*.

Centralized production and nationwide distribution



Leverage existing installed base of SPECT cameras

No facility shielding required



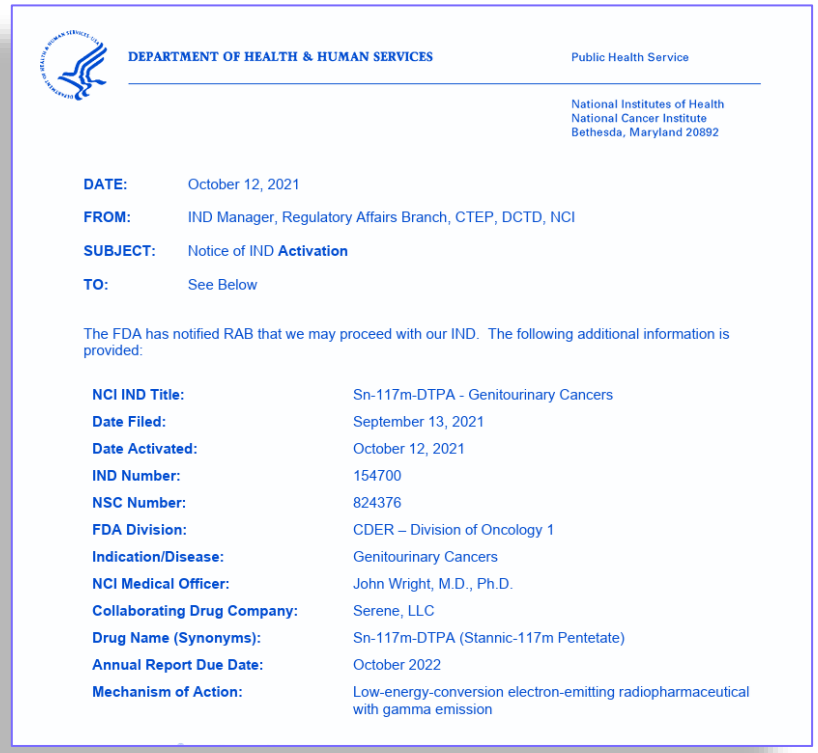
Expand access to community care settings

Clinic Ready: Existing IND and DMF Offer Low-risk Entry into Systemic Theranostics

Enables expansion of SmRT bone metastases treatment into multiple cancer types, starting with breast cancer.

NIH NATIONAL CANCER INSTITUTE

$90 M+ CRADA Awarded



DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

National Institutes of Health
National Cancer Institute
Bethesda, Maryland 20892

DATE: October 12, 2021

FROM: IND Manager, Regulatory Affairs Branch, CTEP, DCTD, NCI

SUBJECT: Notice of IND **Activation**

TO: See Below

The FDA has notified RAB that we may proceed with our IND. The following additional information is provided:

NCI IND Title:	Sn-117m-DTPA - Genitourinary Cancers
Date Filed:	September 13, 2021
Date Activated:	October 12, 2021
IND Number:	154700
NSC Number:	824376
FDA Division:	CDER – Division of Oncology 1
Indication/Disease:	Genitourinary Cancers
NCI Medical Officer:	John Wright, M.D., Ph.D.
Collaborating Drug Company:	Serene, LLC
Drug Name (Synonyms):	Sn-117m-DTPA (Stannic-117m Pentetate)
Annual Report Due Date:	October 2022
Mechanism of Action:	Low-energy-conversion electron-emitting radiopharmaceutical with gamma emission

Active Regulatory Foundation

- **Active IND:** Evaluating SmRT for bone metastases.
- **NCI Validated:** Supported by $90M+ CRADA.

Clinical Protocol Ready

- **Dosing:** 30 mCi/70 kg proven to be tolerated; higher dose to be evaluated in the next study.
- **Endpoints:** Sustained pain response & SPECT dosimetry.
- **Trial Start:** Patient recruitment can begin in 1H 2026.

Manufacturing Completed

- **CMC:** FDA manufacturing and radiation safety packages developed.
- **Plug-and-Play:** Partner can file a “cross-reference” IND with minimal delay.

Application #2: Next Gen RSO for $27B OA Market

The SmRT platform for OA follows 70 years of intra-articular injections of beta-emitting radioisotopes (RSO), but adds imaging, improved logistics, and expanded access potential.

Synovetin OA®
In Action

Legacy RSO: Clinically proven, but commercially limited by imaging and logistic hurdles: [1,2]

- **1M+** Joint injections
- **56%** Response rate, safe
- ↓ Reduced inflammation
- ↓ Lower AEs vs. steroids
- ✗ Not imageable
- ✗ Cumbersome production
- ✗ Short half-life
- ✗ Requires shielding

The SmRT Advantage: Modernizing RSO with imaging, streamlined logistics, and commercially validated across 100+ clinics across 35 states in canine OA:

4K+	**0**	**92%**	**71%**	**99%**
Commercial Joint Injections [3]	Serious Adverse Events [3]	Efficacy: Early-Stage OA [4]	Efficacy: Late-Stage OA [4]	Confirmed Joint Retention [6,7]

- Leverage Image-based patient selection and dosimetry
- Centralized production and nationwide distribution
- No facilities shielding required
- Expand access to community care settings

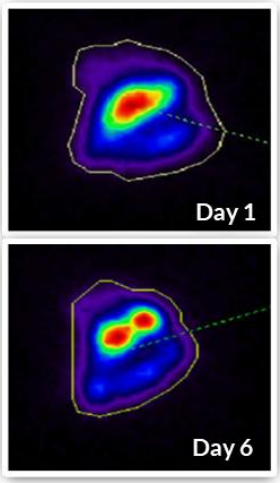
1. Kampen (2016): 60 Years of Radiosynoviorthesis. *Annals of the Rheumatic Diseases*.
2. Kresnik E. et al. (2002): RSO meta-analysis of 2,190 joints. *Nucl Med Commun*.
3. Company data, available upon request.
4. Donecker et al. (2021): Safety & Clinical Response of Sn-117m in Dogs with Elbow OA. *Vet Med: Research & Reports*.
5. Lattimer et al. (2022): Clinical effectiveness and safety of intraarticular administration of Sn-117m radiosynoviorthesis (Synovetin OA). *Vet Rad & Ultrasound*.
6. Donecker et. al. (2021): Treatment Response in Dogs with Naturally Occurring Grade 3 Elbow Osteoarthritis Following Intra-Articular Injection of Sn-117m. PloS One.
7. Lattimer et al. (2019): Measured by gamma imaging and biodistribution studies. *Vet Rad & Ultrasound*.

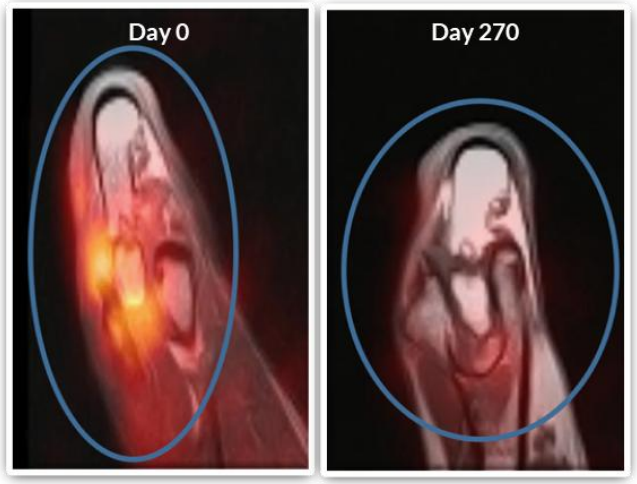
Validation for U.S. Clinical Readiness in OA

SmRT's STC model demonstrates image-verified dose retention and disease-modifying potential in targeting activated macrophages in chronic OA

US knee OA consumes $27B in annual direct costs.[4]

Verified Dx and Rx Studies in Canine OA [1-3]





Dx Confirmation:
Gamma imaging confirms dose retention

Rx Confirmation:
PET MRI reveals reduced inflammation (0 vs. 270 days)
Early data suggest disease modification

Clinical & Regulatory Path Readiness

Planned US Patient Recruitment Start: 2H 2026

Health Canada
No Objection Letter

DMF, CMC, Investigator Brochure

Disease Modification Claim Support [5]

100+	4K+	70%+	0
SmRT Human Cancer Subjects Safety Supported	*Canine OA injections completed*	*Canine OA Late-Stage Efficacy*	*Canine OA Serious Adverse Events (AEs)*

Approved Device Precedents & Designations

Boston Scientific TheraSphere Y-90 Glass Microspheres

Approved as Device for Y90 Treatment for Liver cancer

varian Embozene Microspheres; MERIT MEDICAL Embosphere Microspheres

Breakthrough Device Designation Status Granted for Genicular Artery Embolization

1. Lattimer et al., 2019 (*Vet Rad & Ultrasound*)
2. Donecker, J.M., Synovetin OA® Clinical Trials, Presentation (Available upon request)
3. C. Doerr, et al., Pre-clinical Disease Modification, EANM Abstract, 2023 (Available upon request)
4. Deshpande BR, et al. (2016): Symptomatic knee OA prevalence in the US. *Arthritis Care Res (Hoboken).*
5. Plasse et al., OARSI 2026, Abstract 4466078

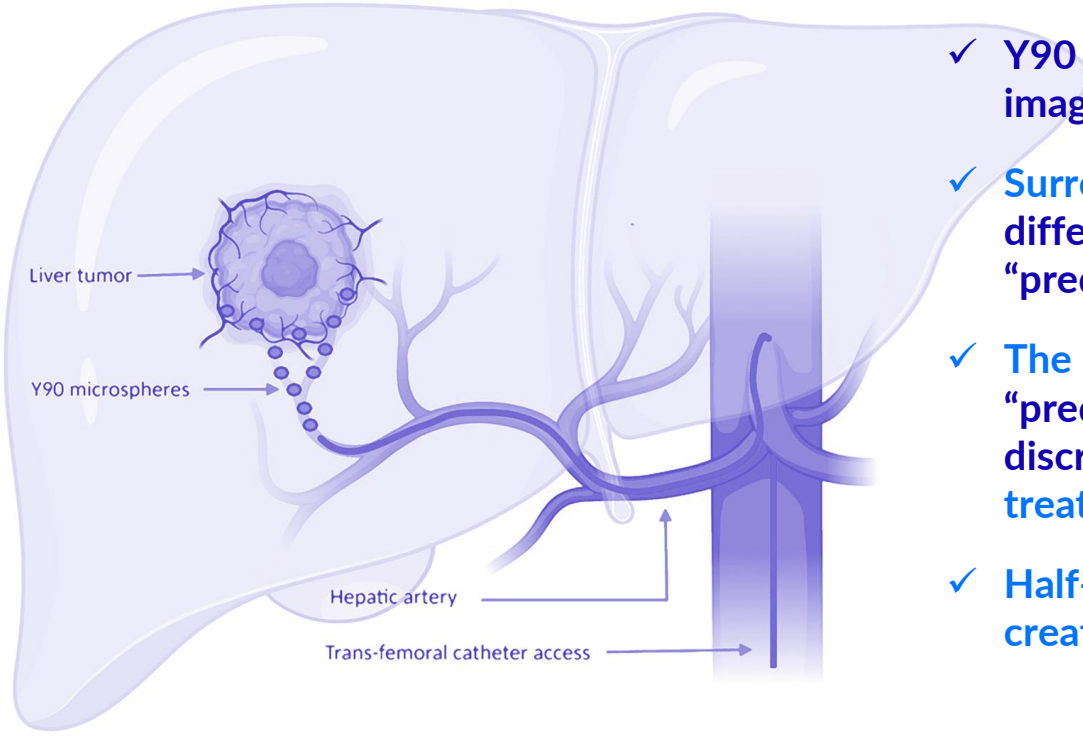
Application #3: Next Gen HCC Radiotherapy

Targeting Hepatocellular Carcinoma (HCC) with a safer, image-verified solution.

SmRT overcomes Y90's limitations by providing a simultaneous Rx and Dx solution with easier handling and a potentially safer profile that spares healthy tissue.

$1B+ Standard of Care & Established Call Points

- ✓ **HCC is the fastest-rising cause of cancer-related death in the US.[1]**
- ✓ **Y90 Transarterial Radioembolization (TARE) is the standard of care for unresectable HCC.**
- ✓ **$1B+ Annual Revenue generated by Boston Scientific TheraSphere™ and Sirtex SIR-Spheres®.**
- ✓ **STC Adoption Ready: No physician behavior change required—interventional radiologists already use microparticles daily.**



Clinical & Commercial Challenges of Y90

- ✓ **Y90 is a pure beta-emitter with poor imaging capabilities.**
- ✓ **Surrogate Problem: Requires a different isotope (Tc-99m) to "predict" Y90 distribution.**
- ✓ **The Mismatch: Studies show the "prediction" often creates a 20% discrepancy from the actual treatment.[2]**
- ✓ **Half-life and radiation shielding create cumbersome logistical issues.**

1. American Cancer Society, Cancer Facts & Figures 2024; Death rates have doubled since 1980.
2. Wondergem M, et al. J Nucl Med. 2013;54(8):1294-1301. (Found >20% discrepancy in 43% of segments).

Application #3: Next Gen HCC Radiotherapy

SmRT STC Model Improves Care and Commercial Logistics.

SmRT addresses the 'Black Box' of Y90 by enabling real-time administration of therapy, dose measurement, and response verification with a potentially tissue-sparing radiotherapy.

See-Treat-Confirm Imaging

Single-agent theranostic eliminates *Y90 Black Box* surrogate scans and ensures precise dosimetry and treatment verification.

Can integrate imaging with SPECT CT for enhanced Dx and Rx:

SIEMENS Healthineers

GE HealthCare

PHILIPS Healthcare

Canon CANON MEDICAL

Commercial & Logistic Advantages

- Single-agent theranostic enables same day Dx & Rx
- Centralized production and nationwide distribution
- No facilities shielding required
- Expand access to community care settings

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Clinic Ready.
Partner Ready.
Multiple $B+ Indications.

Sn-117m presents a significant opportunity in next-generation precision radiotherapy, enabling strong revenue generation through its existing infrastructure and market strategy.

Summary & Next Steps

High Value Opportunity
- $200B+ TAM: Significant scalability, multiple indications.
- SmRT Platform: High-efficacy care delivered in outpatient settings.

Strong Operational Foundation
- Defensible IP: 26 active patents and additional trade secrets.
- Infrastructure: Validated U.S. manufacturing and national supply chain.

Execution & Readiness
- Clinical Roadmaps: Transitioning to the clinic in 1H 2026.
- Validated Data: Existing human and commercial datasets to minimize risk.

Partnership Engagement
- Next steps: Execute NDA for full data room access.
- Structure: Flexible, staged investment ($20M to $100M).