(NASDAQ:DRTS)

Company Overview

July 2022

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Alpha Tau – Key Investment Highlights

1. Proprietary Alpha DaRT designed to safely deliver alpha radiation with localized precision in solid tumors, sparing surrounding healthy tissue
2. Broad potential and preclinical evidence supporting evaluation across various solid tumors (skin, pancreas, breast, GBM, etc.) with 18 peer-reviewed pre-clinical papers
3. Compelling potential immuno-stimulatory effect and synergetic combination with other therapies
4. Exhibited 100% ORR and ~78% CR in first-in-human clinical trial in 28 SCC tumors. Over 100 superficial tumors treated to date, with a similar profile observed. 100% CR seen at 12 weeks in 1st US study
5. Favorable safety profile observed, no systemic toxicities
6. Robust clinical-trial strategy with leading global centers, with U.S. pivotal study forthcoming in recurrent cutaneous SCC. Two FDA Breakthrough Device Designations (skin & GBM)
7. Solid logistics based on purpose-built manufacturing facilities, built or in planning, in the US, Israel and Asia, with a highly scalable and optimized proprietary production process
8. Strong intellectual property (method and device) with over 160 issued and pending patents worldwide
9. Experienced management team, including Alpha DaRT's co-inventors, with expertise in oncology development, manufacturing scale up and commercialization

Therapeutic Focus

We are focused on delivering solutions to three markets that we believe would be best served by the unique characteristics of the Alpha DaRT

Localized & Unresectable

- Localized tumors that are not surgical candidates and tumors that recur after surgery and are resistant to other therapies, specifically radiotherapy
- Alpha DaRT to be evaluated as a later line therapy
- Tumor types include SCC, H&N SCC and prostate

High Unmet Need

- Solid tumors that have limited treatment options with limited SOC offering
- Alpha DaRT could potentially target broad patient populations
- Tumor types include GBM and pancreatic cancer

Metastatic

- Alpha DaRT would be evaluated for its potential to induce an immune response in metastatic tumors
- Alpha DaRT would be evaluated in combination with check point inhibitors as an adjuvant therapy
- Tumor types include liver, breast and H&N (which includes lip, oral cavity, salivary glands, oropharynx & pharynx) cancers

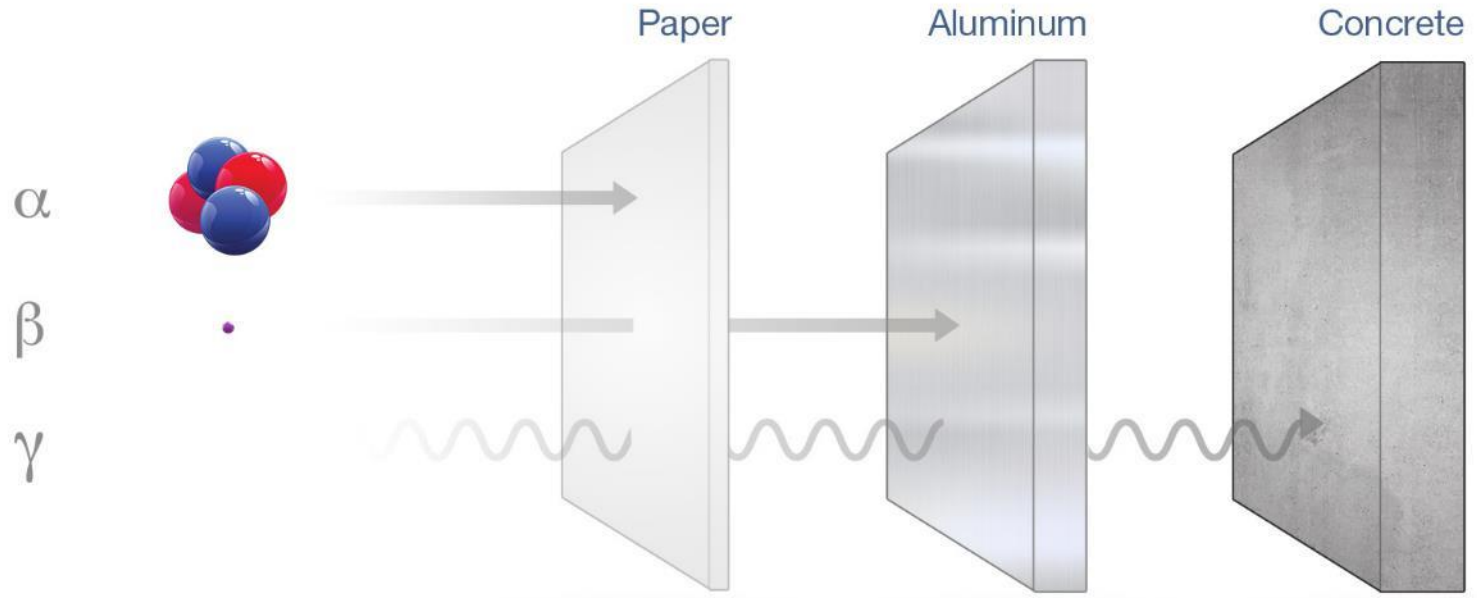
Development Pipeline

- Our clinical trial strategy involves progressing our lead program (superficial tumors), particularly in the US, and conducting feasibility studies in other tumors to evaluate the Alpha DaRT in tumors of high unmet need or metastatic disease
- FDA Breakthrough Device Designation received for certain uses in skin cancer and GBM

Geography	Indication	Pre-Clinical Research / Feasibility Trial / Pivotal Trial / Marketing Authorization	Anticipated Milestones
North America	Skin Cancers	U.S.	• First patient into US pivotal trial targeted for 2H 2022
	Pancreatic Cancer	Canada	• First patient in feasibility trial 2H 2022
	Liver Cancer	Canada	• Trial in planning
Israel	Skin & Oral SCC		
	All Skin & Oral Cancers		• Trial completion and submission
	Ia/mHNSCC (combo with pembrolizumab)		• Feasibility combination trial with Keytruda initiated 4Q 2021; awaiting interim results
	Pancreatic Cancer		• Initiate feasibility trial 4Q 2022
	Breast Cancer		• Trial in planning
	Prostate Cancer		• Trial initiated 2Q 2022 – data ~2Q 2023
Europe	Skin Cancers		• Trials underway
	Pancreatic Cancer		• Trial in planning
Japan	Head & Neck SCC		• Potential PMDA submission in 3Q 2022
	Breast Cancer		• Trial underway
Additional Tumors	Hepatic Cell Carcinoma , GBM, lung		• Development / pre-clinical trials underway

Types of Radioactive Decay

Due to the mass of the alpha particle, in comparison to beta particle, alpha has a low penetration power. This means that the outside layer of the human skin, for example, can block these particles.

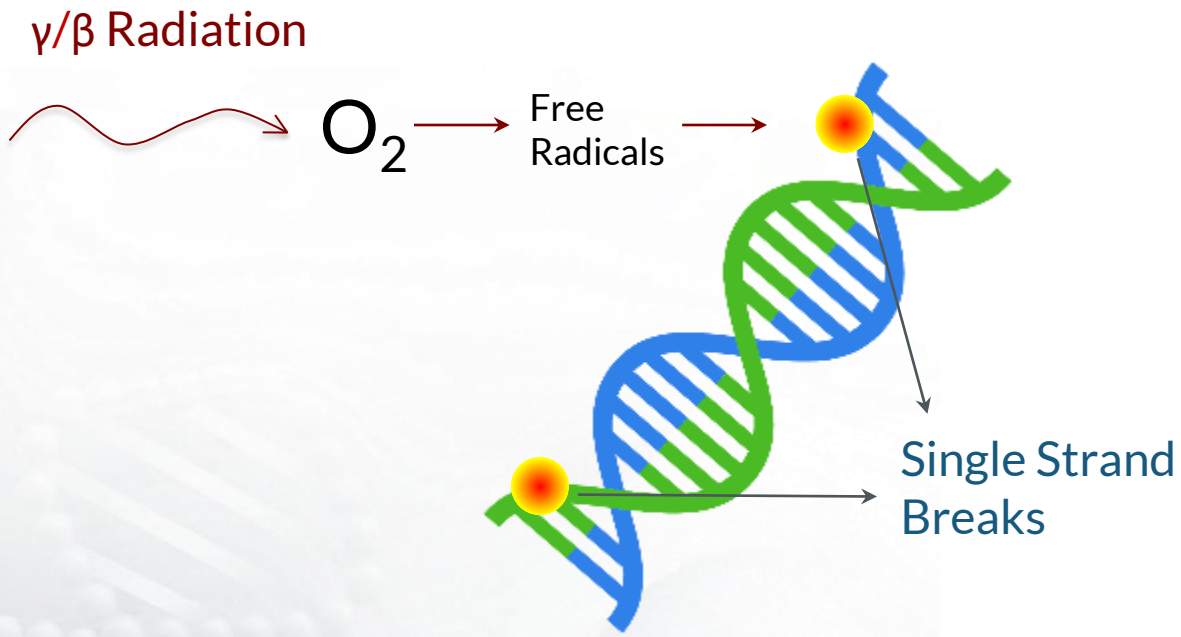


Potent Alpha Radiation: Extensively Damages the DNA

Local radiation therapy with gamma or beta radiation is a mainstay of cancer treatment, but requires high local dose to be effective, as it primarily relies on single-strand breaks in a process relying on oxygen. Alpha radiation can be significantly more efficient given its ability to destroy both strands of the DNA directly, requiring lower levels of radiation

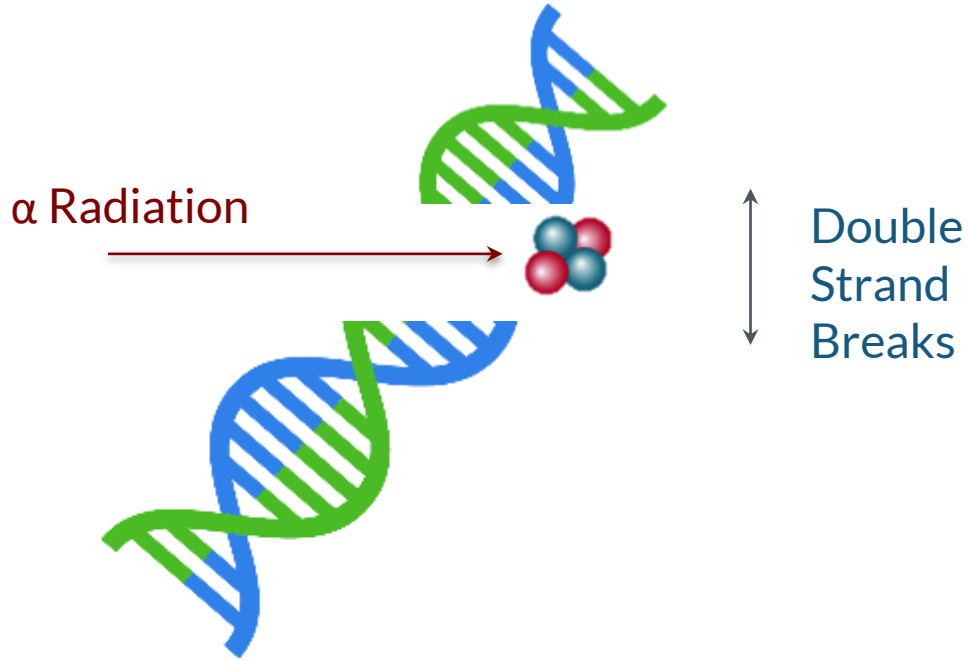
Conventional Gamma/Beta Radiation

- Indirectly damaging the DNA
- Dependent on oxygen presence
- **Repairable single strand breaks**



Alpha Radiation

- Directly damaging the DNA
- Independent of oxygen presence
- **Irreparable double strand breaks**

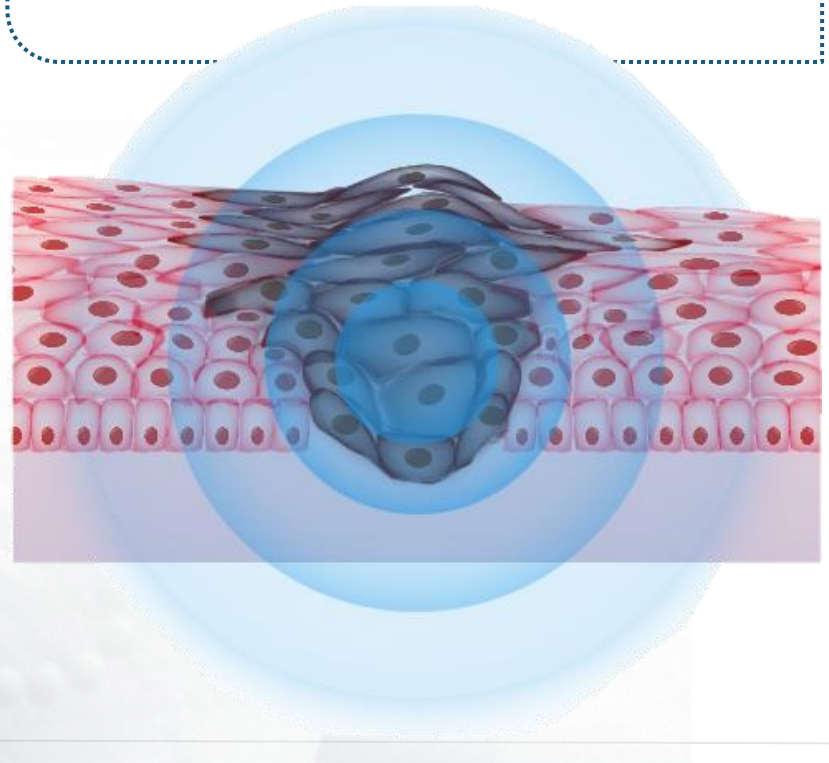


Alpha Radiation is Focal - Short Range Limits Clinical Use

Whereas beta and gamma radiation can penetrate tissue with sufficient range to facilitate tumor coverage (while risking damage to healthy tissue), alpha radiation has short range in tissue (< 100 µm), which limits its clinical usefulness in local delivery

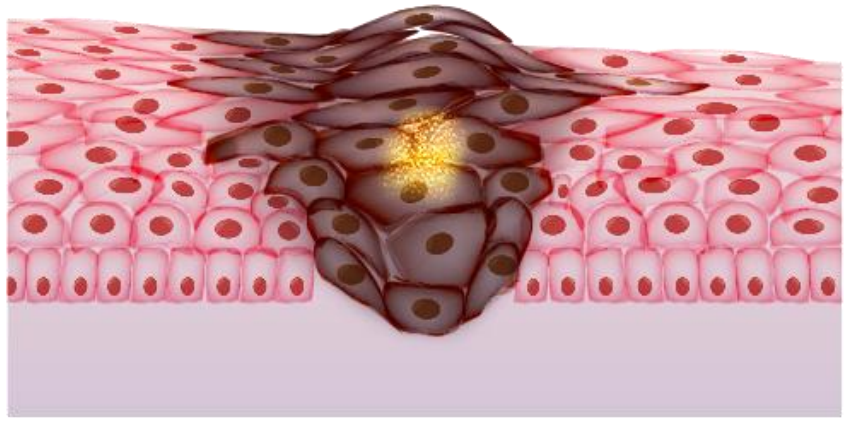
Beta/Gamma Radiation

Long therapeutic range with risk to surrounding organs



Alpha Radiation

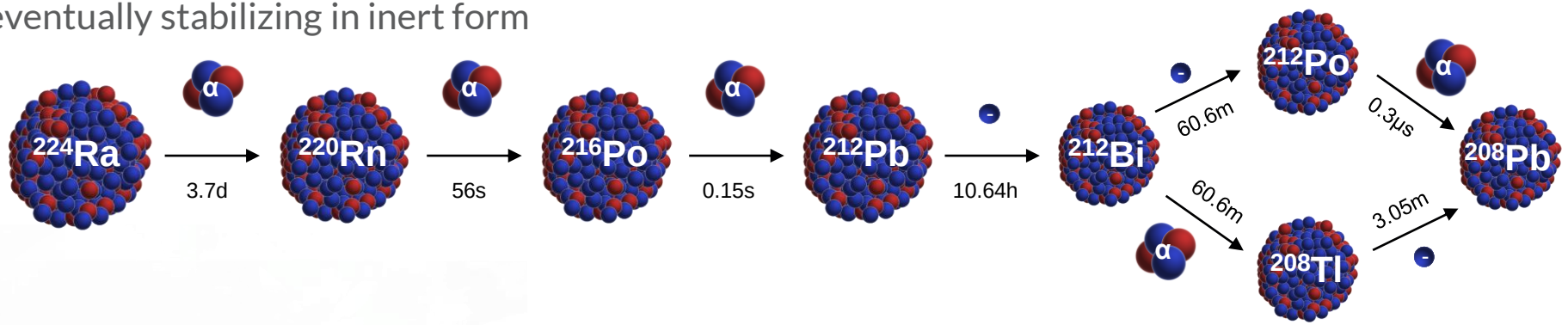
Short range in tissue limits damage to surrounding organs but also limits coverage



Mechanism of Action of the Alpha DaRT Technology

^{224}Ra Decay Chain

- Alpha DaRT leverages the innate decay chain of Radium-224
- The decay chain of Radium-224 includes four alpha particles
- Radium-224 has a half-life of ~3.7 days, while the remaining decay chain has a total half-life of approximately 12 hours, before eventually stabilizing in inert form



Alpha DaRT

- The Alpha DaRT utilizes stainless steel sources that are impregnated with Radium-224
- When the Alpha DaRT source is injected into the tumor, the radium remains attached to the source while its daughter atoms detach, emitting cytotoxic alpha particle payloads as they move deeper into the tumor until eventually stabilizing

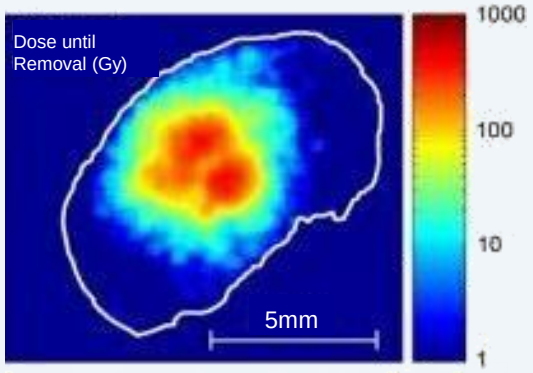
Alpha DaRT is designed to overcome the range limitations of alpha particles through precise release of alpha emitters into the tumor, generating a potent and tight distribution of alpha radiation

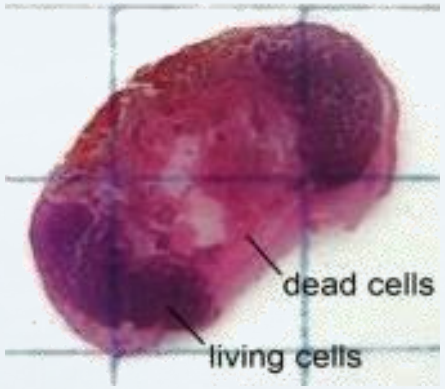
Alpha DaRT - Diffusing Alpha-emitters Radiation Therapy

https://www.youtube.com/watch?v=nwfzJHm0fTQ

Alpha DaRT Has a Unique Potential to Preserve Healthy Tissues

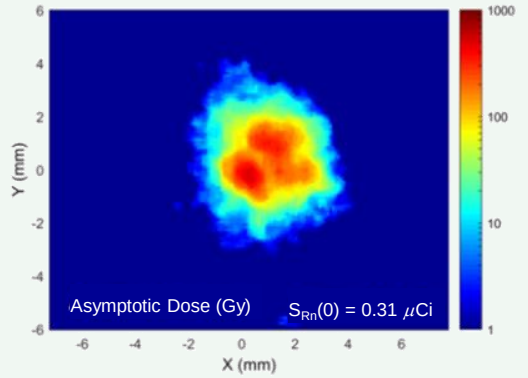
Alpha DaRT is unique in its potential to deliver a high dose of radiation in a very conformal form, with sharp dose drop-off outside of a 5mm range



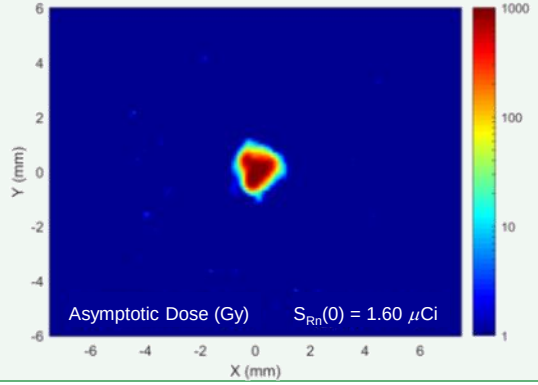


The range of the Alpha DaRT was observed to be meaningfully more extensive in tumor tissue than in healthy tissue in animal studies

Diffusion in SCC



Diffusion in healthy tissue



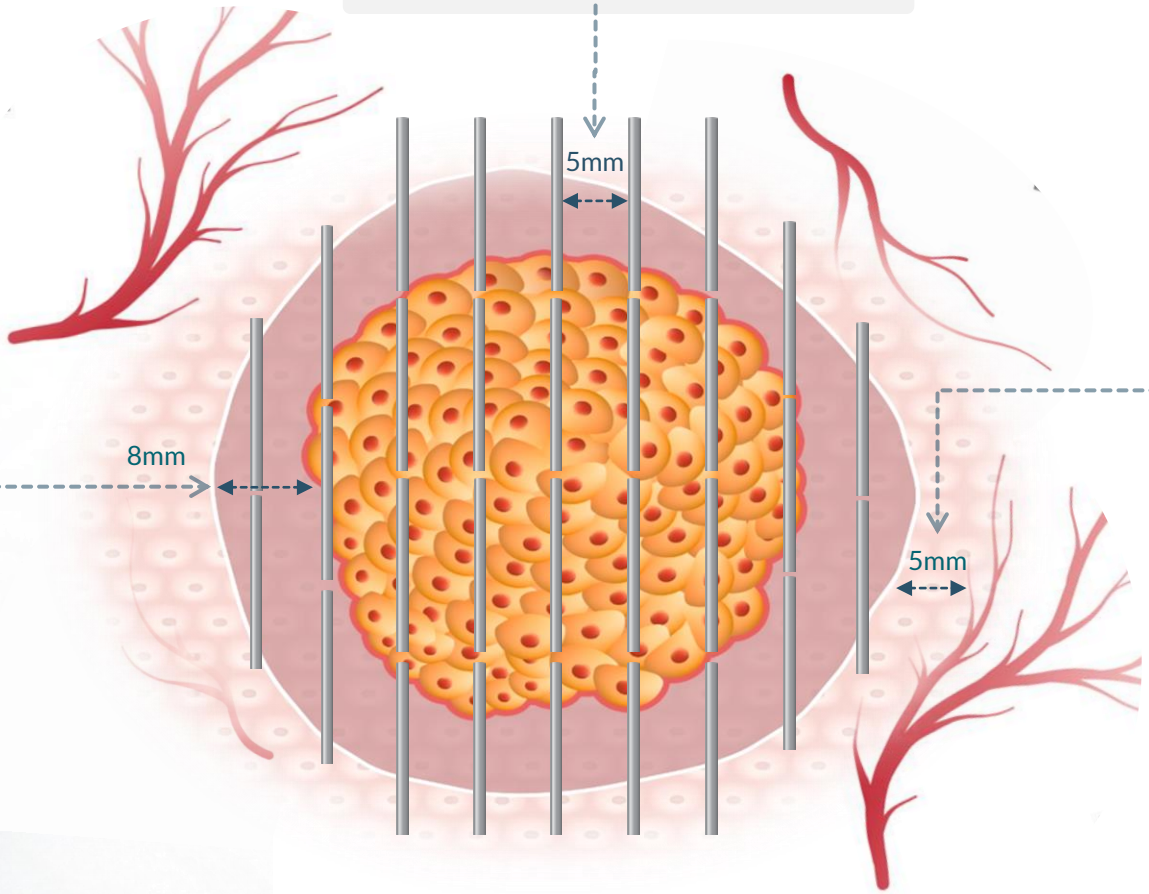
Alpha DaRT Source Placement

Through a series of Alpha DaRT injections to the tumor, spread a few millimeters apart, a clinician can potentially deliver alpha radiation to the full geometry of the tumor while taking care to avoid sensitive healthy tissue around the tumor

< **5 mm** between sources

Coverage of margins of **8 mm** (last source to be placed **5 mm** outside of the tumor)

5 mm safety distance from critical organs



Intra-tumoral Delivery Methods

We Have a Total of Seven Applicators Which Have Been Developed for a Range of Potential Uses to Accommodate for:

Treatment Delivery Method

Duration of Implantation

Tumor Location

Our Applicators Allow Us Flexibility to Deliver Alpha DaRTs Into Both Superficial and Internal Tumors

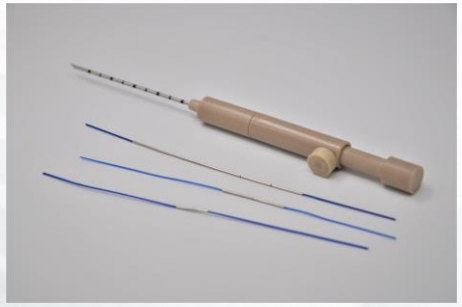
Temporary Implants (Superficial Tumors)

Applicators are supplied preloaded, sealed and designed for immediate use in the procedure room

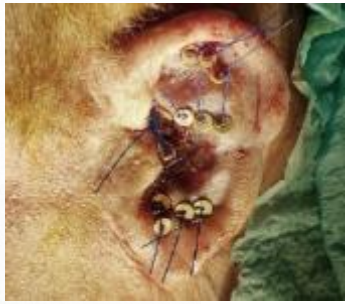
Sources are hollow and strung onto a surgical suture, allowing the clinician to insert the sources into the tumor and leave the suture in place

Example Indication: Superficial Tumors. *sources are affixed to a biocompatible suture and loaded inside the needle*

Alpha DaRT Needle Applicator



Needle Applicator in Action

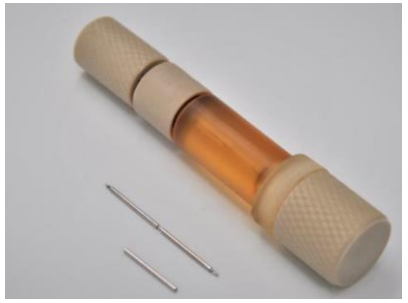


Permanent Implants (Internal Tumors)

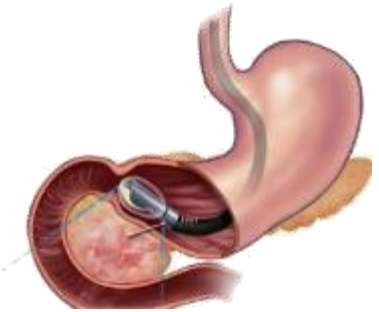
Applicators are supplied preloaded or unloaded, and are designed to allow clinicians flexibility to load the sources in the course of treatment and to select how many sources to deliver

Example Indication: Pancreatic Tumors. *Device is designed to be fitted to existing needles such as standard Fine Needle Aspirator (FNA) to ultimately deliver sources into the tumor*

Loading Device



Procedure: FNA in Conjunction with Endoscopic Ultrasound

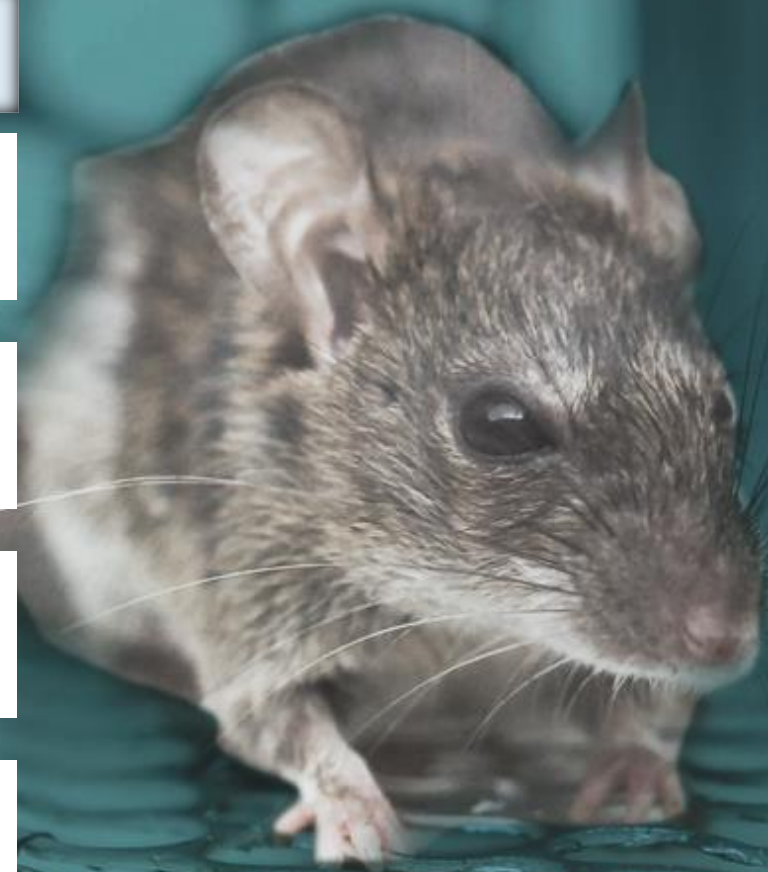


Response Observed in All Tested Solid Tumors in Preclinical Studies

18 Published Preclinical Studies in Peer-Reviewed Journals

Across a variety of tumor types, we have not observed resistance to the radiation delivered by the Alpha DaRT

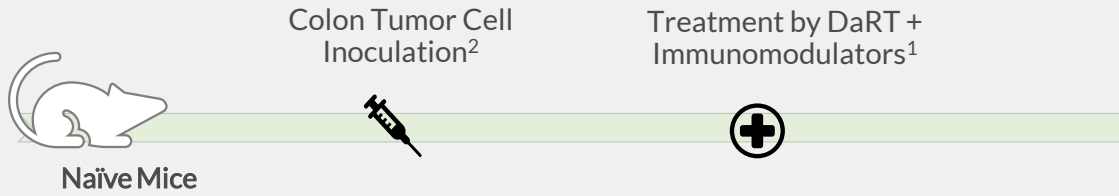
- Squamous Cell Carcinoma
- Colon Carcinoma
- Lung Adenocarcinoma
- Glioblastoma Multiforme
- Lung Squamous Cell Carcinoma
- Sarcoma
- Pancreas Adenocarcinoma
- Melanoma
- Prostate Adenocarcinoma
- Breast Carcinoma

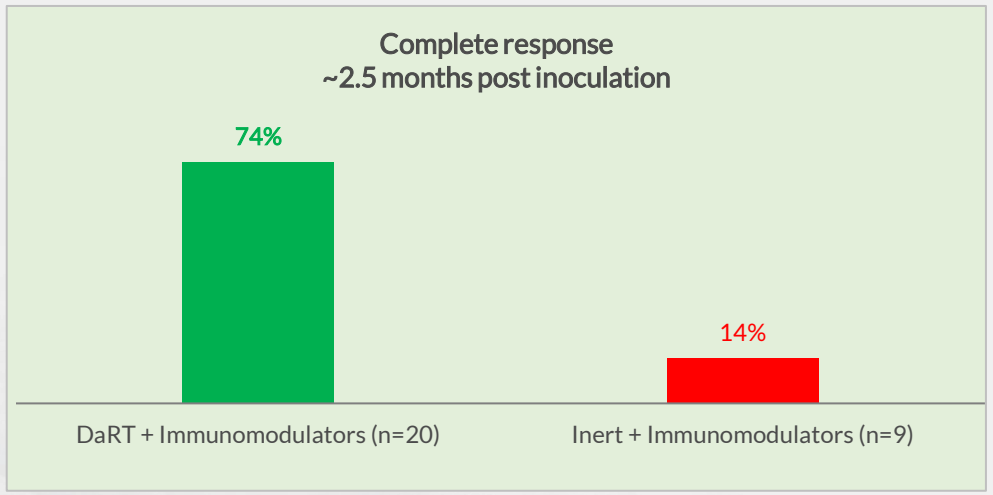


Observed Cancer-Specific Immune Protection (1/2)

In challenging mice 4 months after treatment, those previously treated by the Alpha DaRT displayed a meaningful retained protection against regrowth of the same tumor type, as compared to the two control groups

Tumor Treatment by DaRT + Immunomodulators[1]

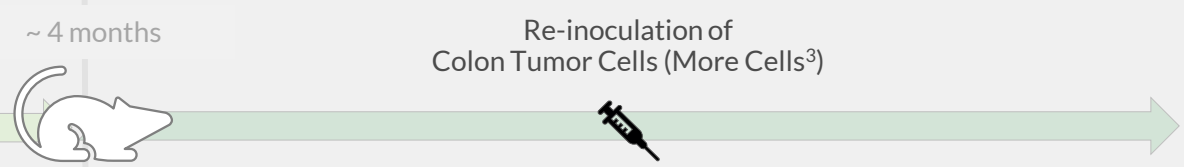


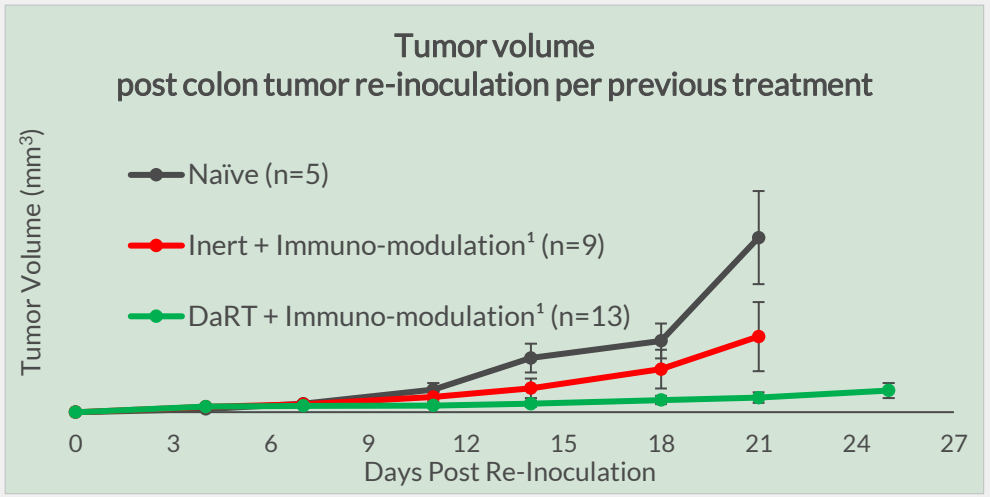


~ 4 months

CR from Treatment / Surgical Resection

Tumor Re-Inoculation after Treatment by DaRT + Immunomodulators vs. Inert[1]





(1) Three groups of mice were inoculated with 5 x 10^5 CT26 tumor cells and then treated with (1) DaRT + CP, Sildenafil and 2xCpG, N=10 (2) DaRT + CP, Sildenafil and CpG, N=10 or (3) inert + CP, Sildenafil and 2xCpG, N=9. Complete responders or tumor-resected mice were re-challenged ~4 months after DaRT with 5 x 10^6 CT26 tumor cells.
(2) CT26 5 x 10^5.
(3) CT26 5 x 10^6.

Observed Cancer-Specific Immune Protection (2/2)

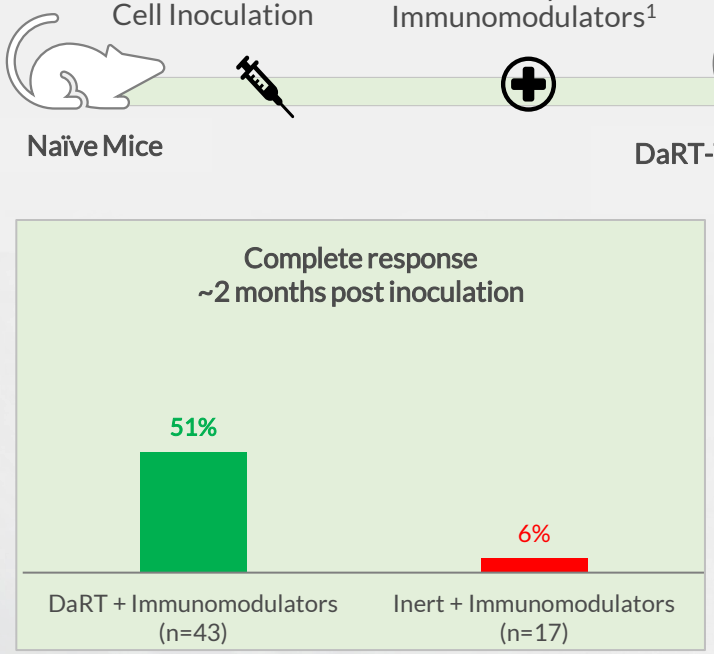
This activity was then shown to be tumor-specific – the challenge only resisted regrowth of the same tumor line. It was also shown to be transferrable via the transfer of splenocytes

Tumor Treatment by DaRT + Immunomodulators

Colon[3] Tumor Cell Inoculation

Treatment by DaRT + Immunomodulators[1]

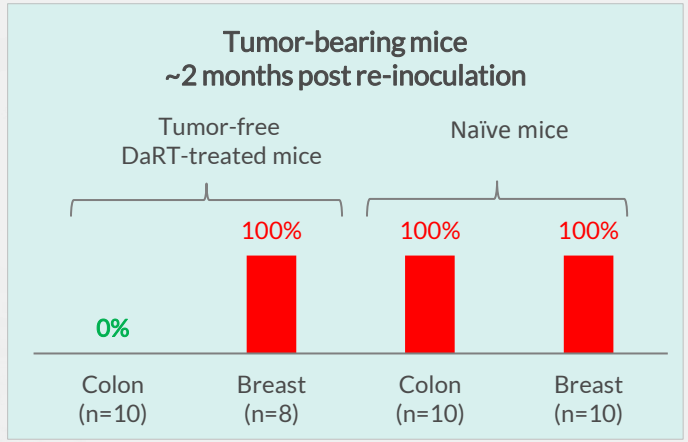
Naïve Mice



Tumor Re-Inoculation[2] (Challenge Assay)

Colon[3] / Breast[4] Tumor Cell Re-inoculation

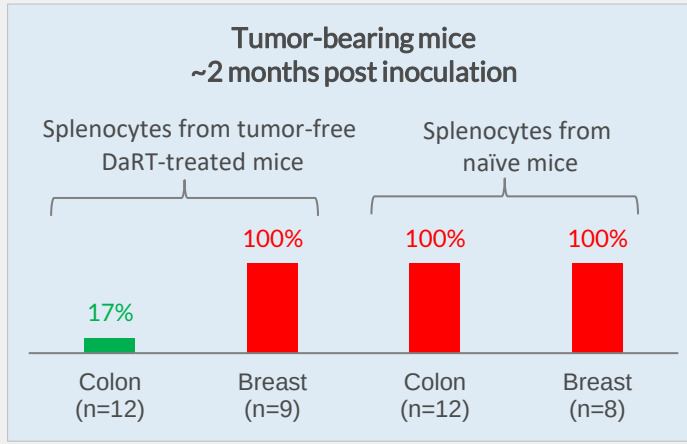
DaRT-Treated Tumor-free + Naïve Mice



Immune-Memory Transfer[2] (Winn Assay)

Inoculation of Colon[3] / Breast[4] Tumor Cells + Splenocytes from Tumor-free Pretreated Mice

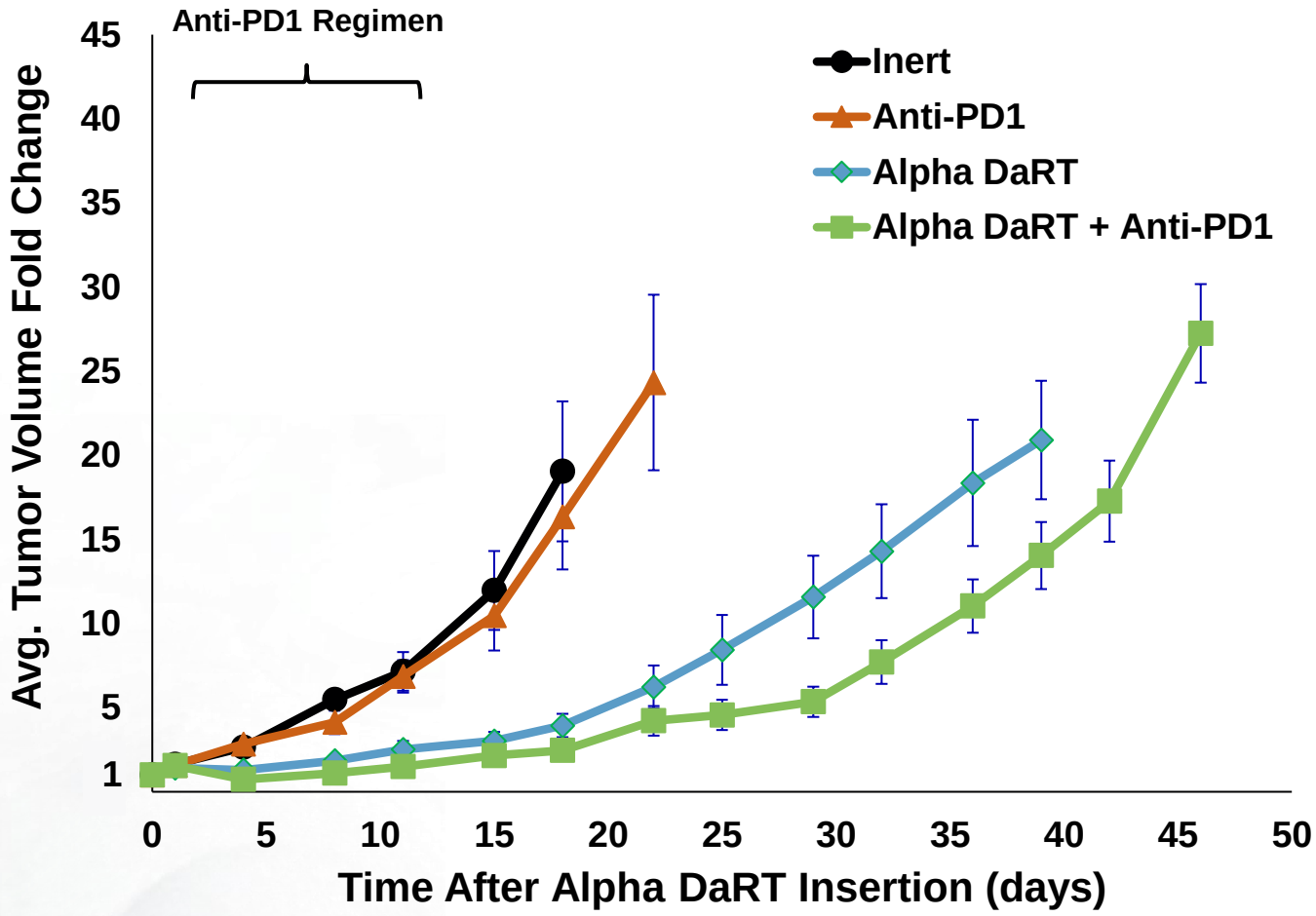
Naïve Mice



(1) Immuno-modulation refers to a combination of low dose CP, Sildenafil and CpG.
(2) Mice with CR from DaRT + immuno-modulators (n = 18) and naïve mice (n = 20) were inoculated with 5 x 10^5 CT26 or DA3 cells 52 days post inoculation (Challenge Assay). Naïve mice were injected intradermally with splenocytes from either naïve or CT26-bearing mice treated by DaRT and immunomodulators, coupled with CT26 or DA3 tumor cells (Winn assay). The presented results are based on cumulative data from two different experiments.
(3) CT26 5 x 10^5.
(4) DA3 5 x 10^5.

Alpha DaRT Elicits Effect from anti-PD1 in SCC Mouse Model (SQ2)

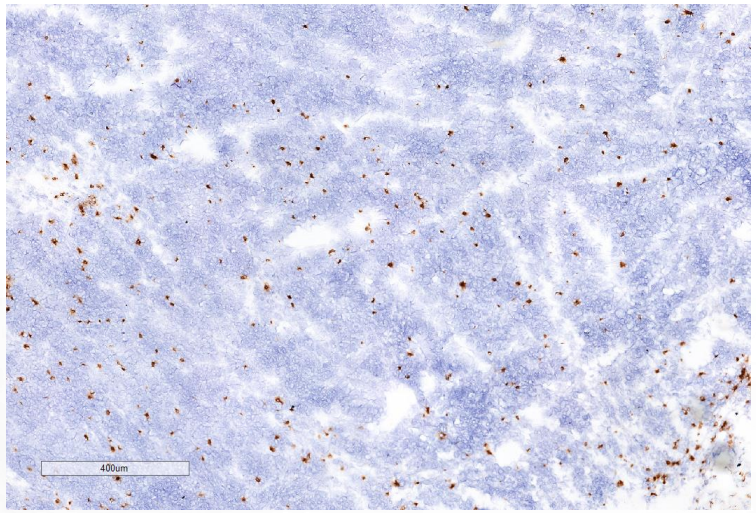
While mice with the SQ2 squamous cell carcinoma model showed little to no effect when treated with a murine anti-PD1 agent, the observed effect was larger for the combination with Alpha DaRT than for Alpha DaRT on its own



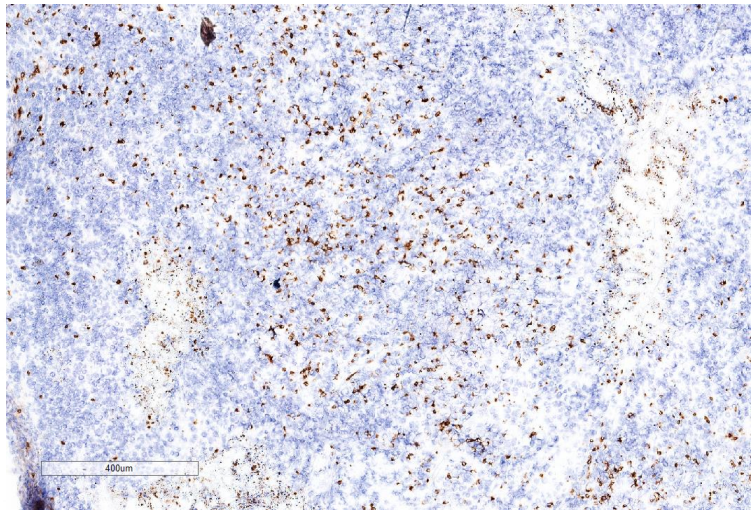
Alpha DaRT Increases Infiltration of CD3+ T-cells Into the Tumor

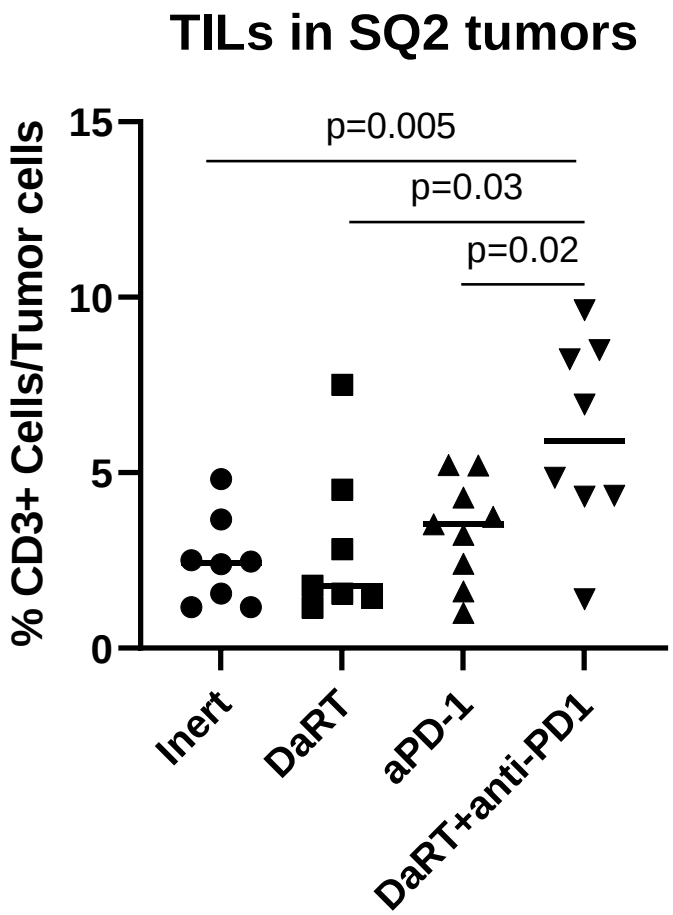
The combination of Alpha DaRT with anti-PD1 demonstrates the highest level of TILs in mice with SQ2 SCC tumors, potentially indicating an ability to potentiate the checkpoint blockade

anti PD-1



Alpha DaRT + anti PD-1





Outline of Our First Clinical Study: Skin / Head & Neck SCC

Trial Sites: Israel, Italy

Primary objective: Evaluate feasibility & safety

Secondary objective: Evaluate initial tumor response & local progression-free survival

Key Eligibility Criteria

SCC histopathologically confirmed

Lesions ≤ 5 cm*

Age ≥ 18

ECOG performance scale ≤ 2

Patients W/O immunosuppression

Generally **previously treated by radiation or surgery, recurrent**

Treatment & Procedure

Treatment plan based on CT-simulation

Sources 1cm length, 0.7mm diam.

Activity per source 2 μCi

Outpatient setting

Local anesthesia

Number of sources inserted: min 3, max 169

Timeline and Follow-Up

Alpha DaRT sources insertion

Removal after 15 days

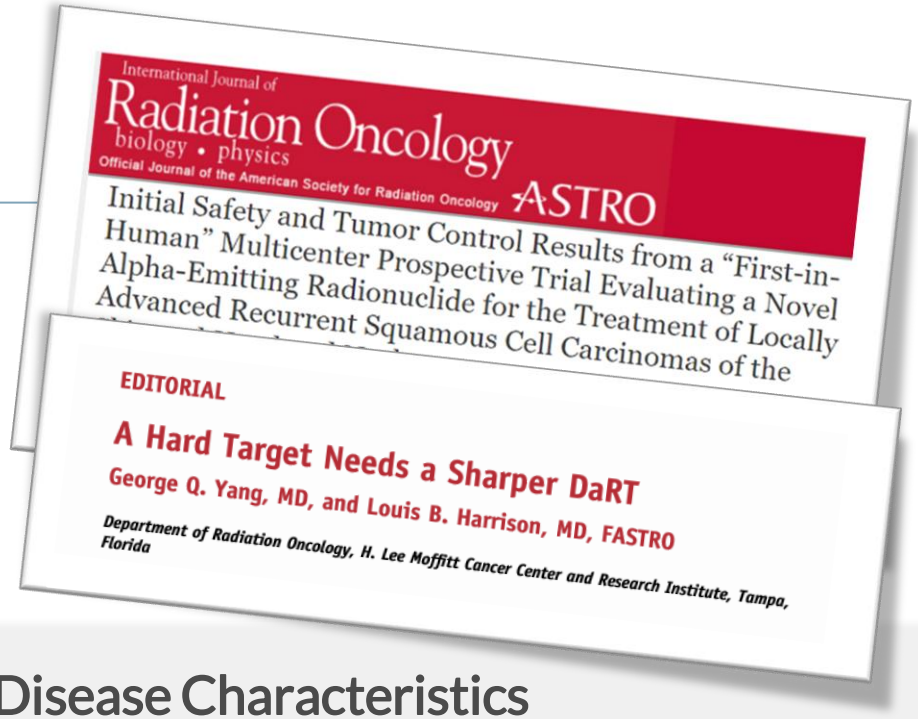
Check-up on days 4, 9 and 30 after insertion

Long term follow up based on standard of care

*in the longest diameter (without nodal spread).

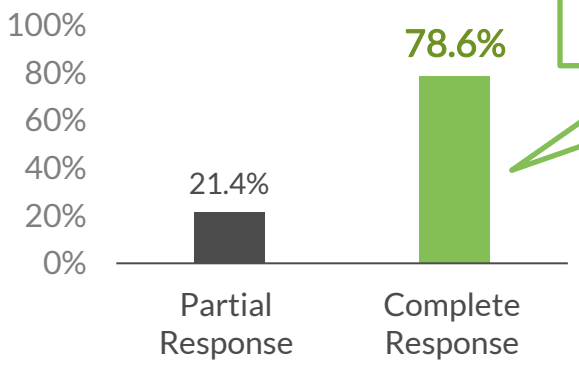
Skin / Head & Neck SCC Study Results

- 100% overall response rate
- Durable responses observed
- Responses observed within days
- Well tolerated; no systemic toxicity observed

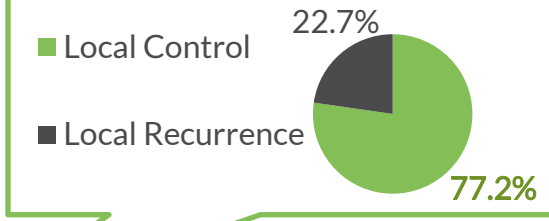


Efficacy Results

Overall Response (n=28)



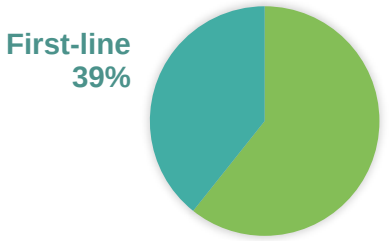
CR Durability (~7 months)



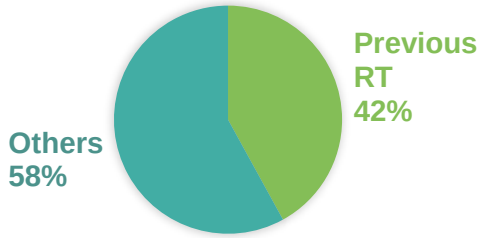
Baseline Disease Characteristics

Effective against radioresistant tumors (Patient median age = 80.5 years)

Previous Treatment[1]



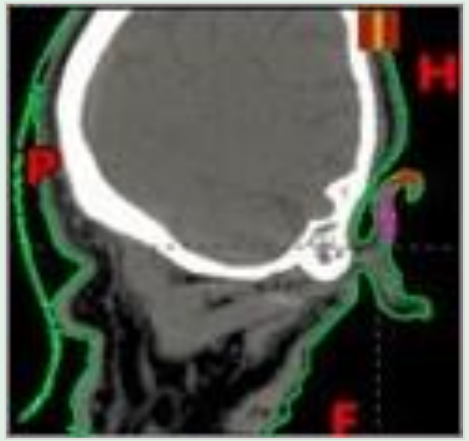
Previous Radiotherapy



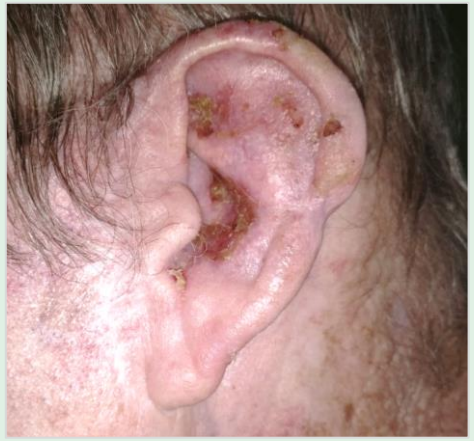
[1] Most patients (60.7%) had recurrent and previously treated disease by either surgery, prior external beam radiotherapy or both; 13 of 31 (42%) had received prior RT.

AP-02 Complete Response

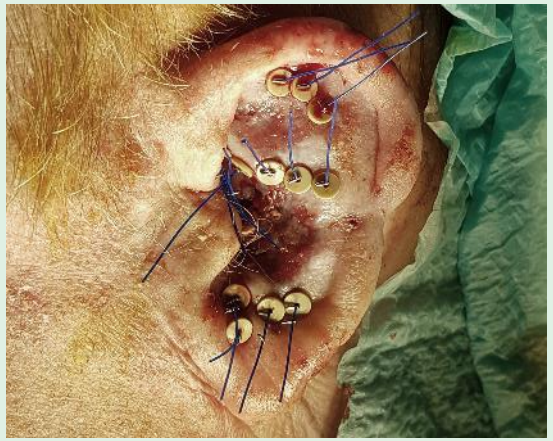
Age	80	Applicators used	6
Previous treatments	Radiation, Surgery	Alpha DaRT sources inserted	10
Tumor initial volume [cm^3]	1.4	Total activity [µCi]	20



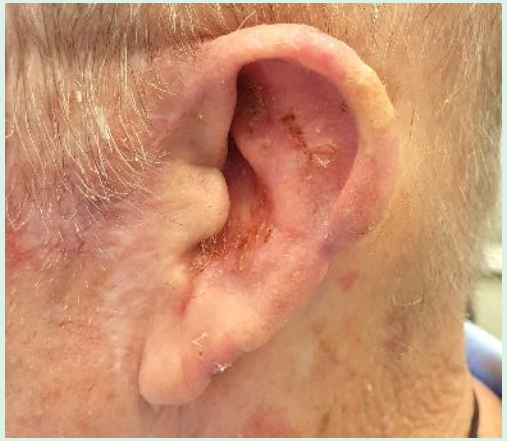
Planning



Before
21-Mar-2017



During
21-Mar-2017

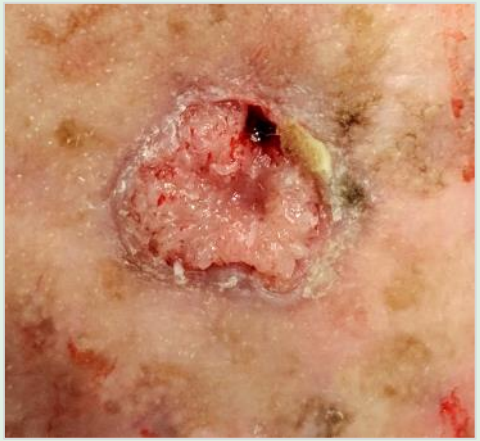


After
01-Jun-2017

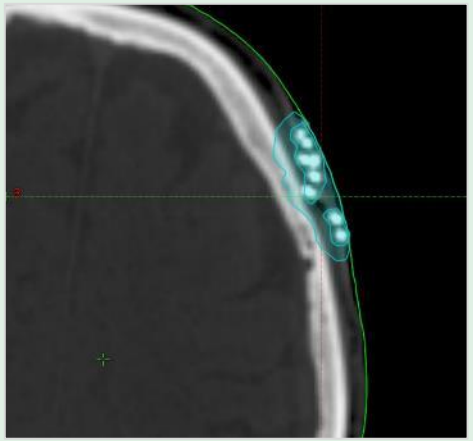
AP-022 Complete Response

Age	68
Previous treatments	None
Tumor initial volume [cm^3]	2.8

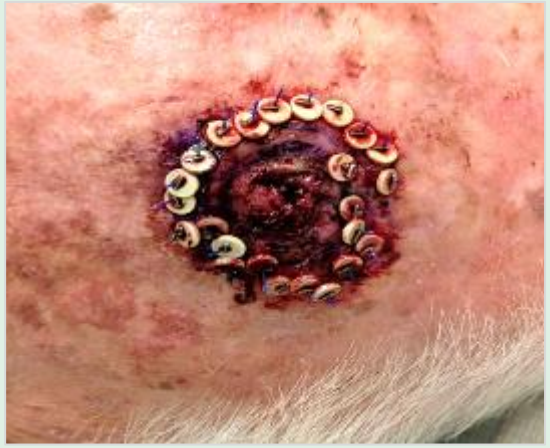
Applicators used	12
Alpha DaRT sources inserted	24
Total activity [µCi]	48



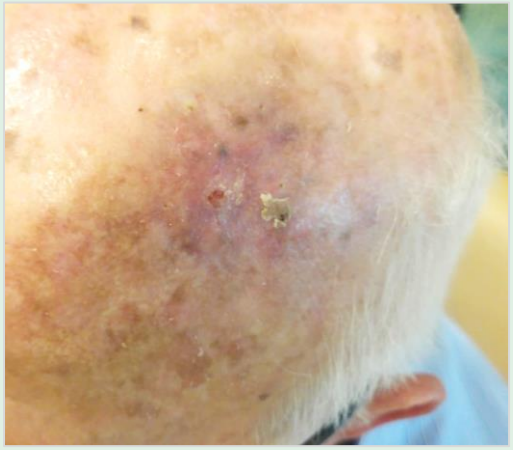
Before
27-Aug-2018



During
30-Aug-2018



During
30-Aug-2018



After
30-Sep-2018

Alpha DaRT Treatment was Well Tolerated

No systemic toxicities and minimal (≤ grade 2) local toxicities observed to date

Targeted treatment
Designed to spare neighboring healthy tissue

No systemic toxicity observed
Negligible and short-term radioactivity in the patient's body

Minimal local toxicity observed
Minimal local toxicity with grade ≤2 resolved within a month

Safe procedure for caregivers
No special shielding required

No suppression of immune system observed
Critical in these times of pandemic

Acute Local Toxicity	Incidence (%) Severity Grade 1	2	3
Administration site erythema	11 (41%)	9 (33%)	0 (0%)
Administration site edema	9 (33%)	10 (37%)	0 (0%)
Administration site pain	8 (30%)	11 (41%)	0 (0%)
Administration site exudate	2 (7%)	8 (30%)	0 (0%)
Administration site ulcer	4 (15%)	5 (19%)	0 (0%)
Administration site numbness	1 (4%)	0 (0%)	0 (0%)
Administration site pruritus	3 (11%)	0 (0%)	0 (0%)
Administration site bleeding	1 (4%)	0 (0%)	0 (0%)
Aural myiasis (administration site)	1 (4%)	0 (0%)	0 (0%)
Decreased appetite	1 (4%)	0 (0%)	0 (0%)

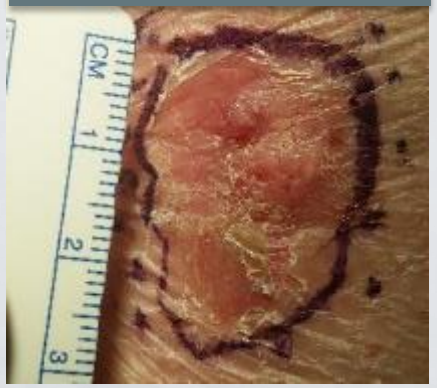
Potential Systemic Immune Effect Observed in One Patient Where a Second, Untreated Lesion Manifested CR

Complete Response + Potential Systemic Immune Effect

Treated Tumor

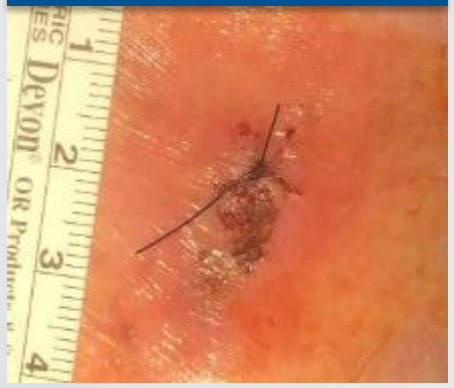
Before

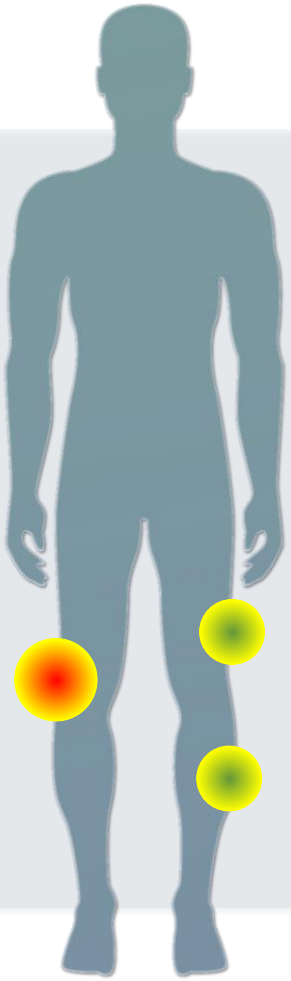
30-Nov-17



After

29-Dec-17

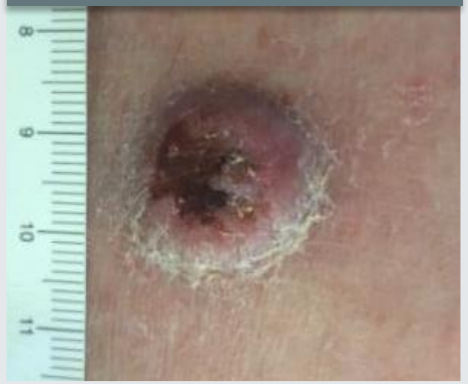




Untreated Tumors

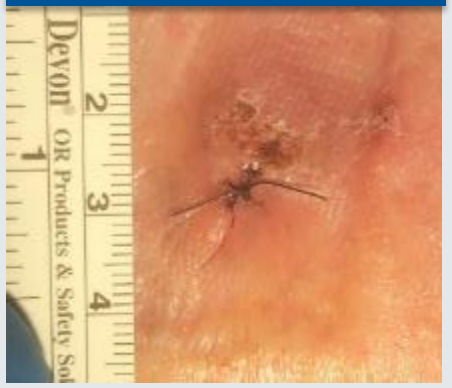
Before

30-Nov-17

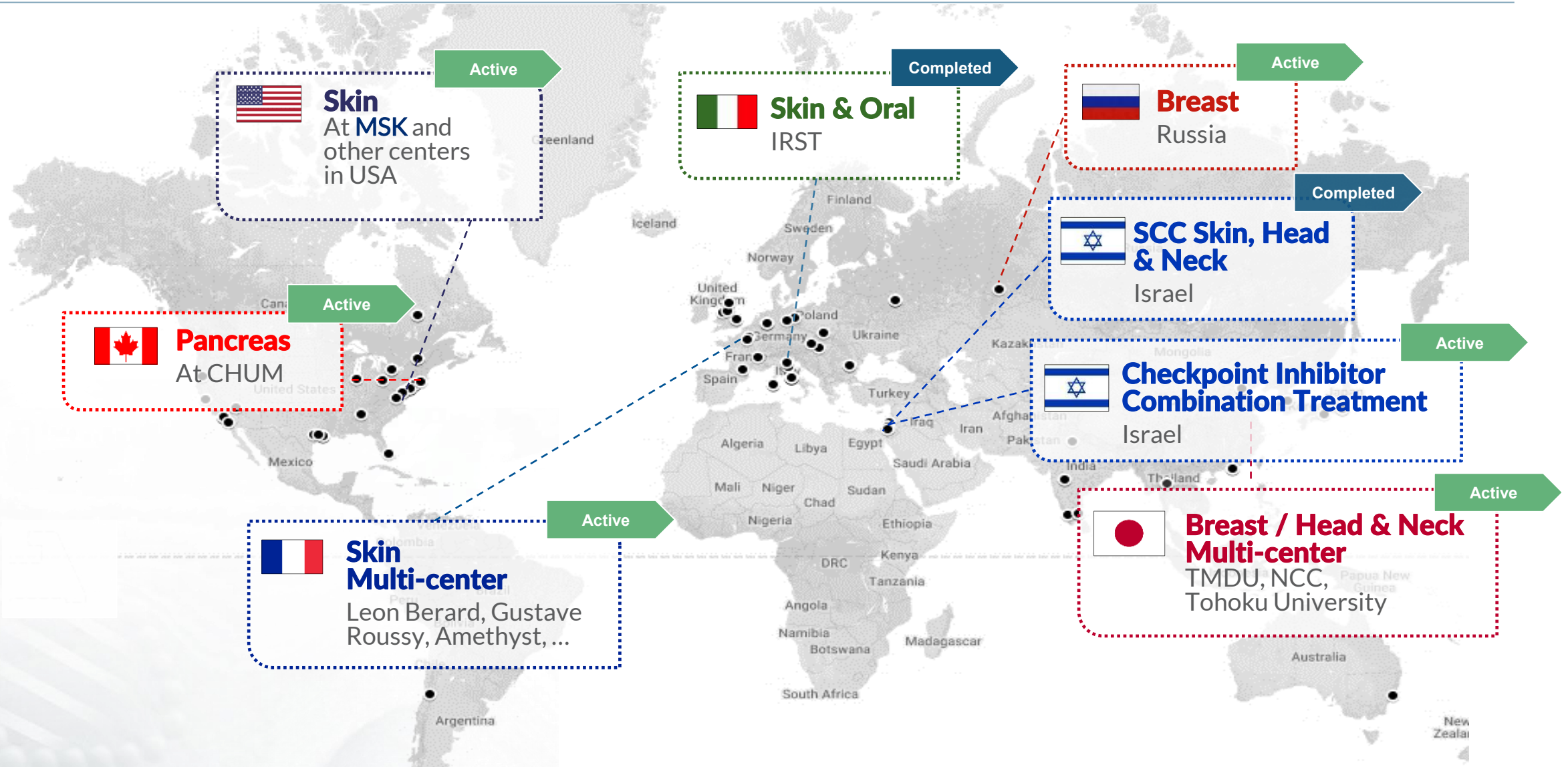


After

29-Dec-17



Seeds of Hope Worldwide – Selected Current Clinical Trials



U.S. Pilot Feasibility Study – Trial Design

- FDA Breakthrough Device Designation received in June 2021

Locations	5 centers in the US, led by Memorial Sloan Kettering Cancer Center
Treatment Timeframe	H2 2021
# of Patients	10
Tumor Type	Skin Cancers
Primary Objectives	Determine feasibility of delivering radiotherapy using Alpha DaRT, with successful delivery in at least 7 patients, and assess frequency and severity of acute AEs
Secondary Objectives	Assessments of radiotherapy-related AEs, tumor response, radiation safety, stability of device placement, and QoL
Eligibility	Malignant skin or superficial soft tissue tumor 1-5 cm in size that is suitable for percutaneous interstitial brachytherapy

Case Study - 77 Y/O with Recurrent BCC on the Nose

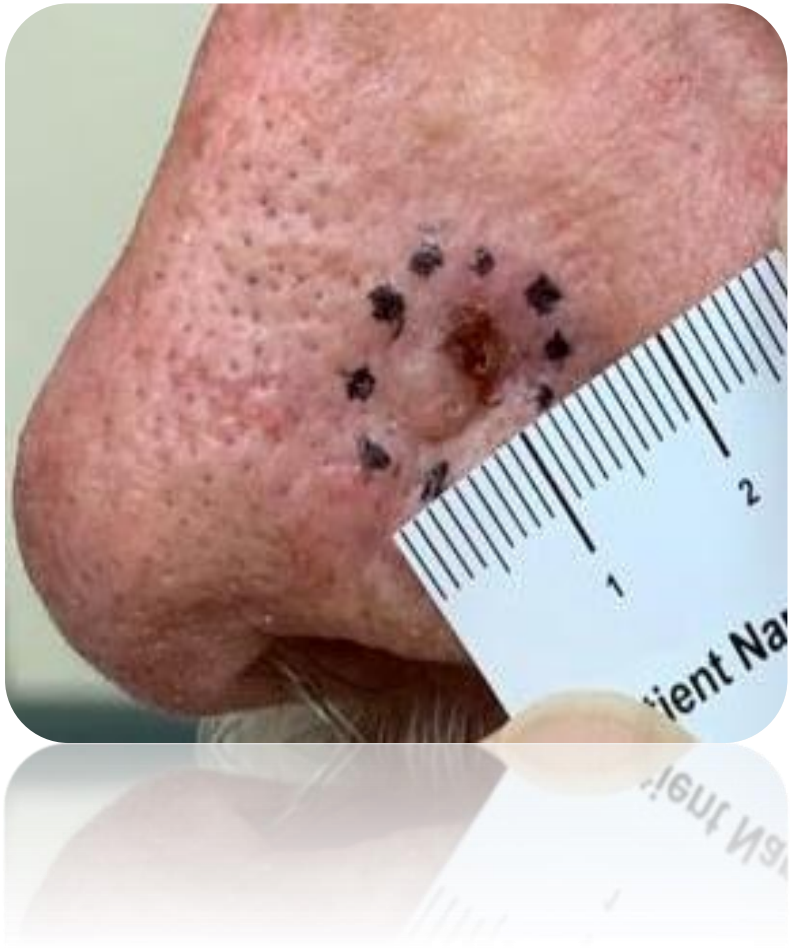
Prior treatments:	Surgery (2005)

Tumor Size:

Longest diameter	1.59 cm
Depth	0.5 cm
Volume	0.65 ml

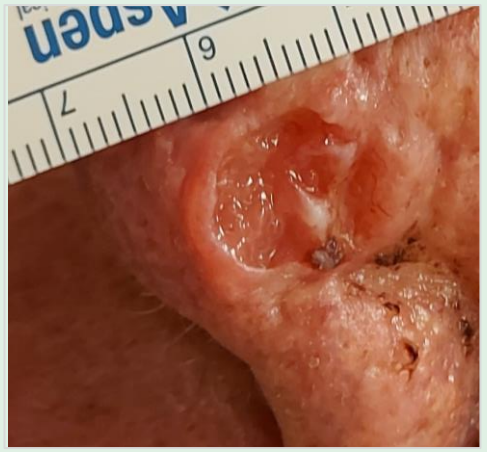
Alpha DaRT Treatment:

Applicators used	15
Alpha DaRT sources inserted	20
Total activity [µCi]	40

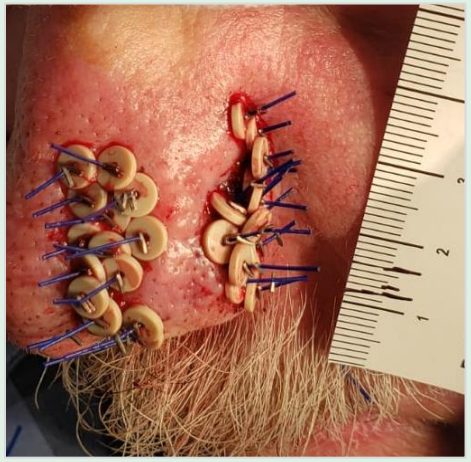


Case Study - 77 Y/O with Recurrent BCC on the Nose

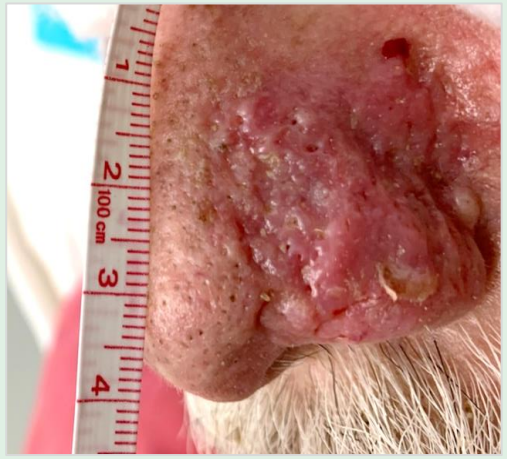
Results



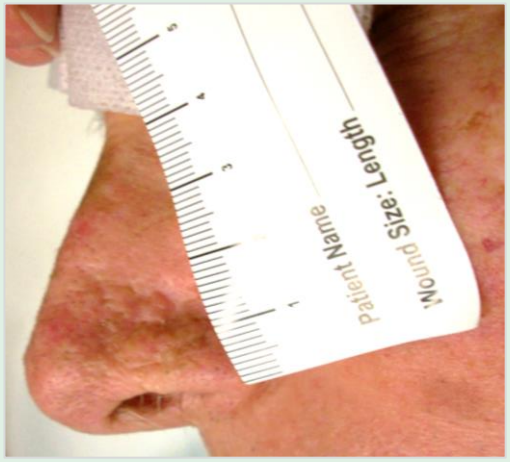
Simulation Day



Insertion Day



Removal Day
15 days



Complete Response
12 weeks

U.S. Pilot Feasibility Study – Safety Results

- Twenty-two (22) **total adverse events** (AEs) were reported in 7 subjects
- Most AEs were of **mild or moderate severity**
- Two (2) serious AEs (SAEs) in a single subject – **both not related to study device or procedure**

Number of Subjects with Procedure- or Device-Related* Adverse Events by Severity Grade

Adverse Event	Severity Grade		
	1	2	3
Dermatitis radiation	2	1	0
Localized edema	1	0	0
Joint range of motion decreased	0	1	0
Pain	0	1	0
Pruritis	2	0	0
Wound infection	0	1	0

Note: Adverse events are presented according to CTCAE V5 coded terms.
* Probably or possibly related

U.S. Pilot Feasibility Study – Efficacy Results

- All 10 subjects achieved a **complete response** (CR) at the 12-week follow-up visit
- There were **no reported relapses** of disease by the final study visit at 24 weeks

Outline of Our Multicenter Pivotal Recurrent SCC study

Primary / safety objectives:

- ORR based on Best Overall Response
- DOR 6 months after initial response
- Assess the safety based on statistics of device-related AEs (per CTCAE v5)

Secondary objectives: Evaluate O-DOR, local control, PFS and OS (all up to 12 months), and QoL Metrics

Key Eligibility Criteria

Recurrent non-metastatic cutaneous **SCC**

Patient with **no curative standard-of-care options**

No **previously untreated SCC**

Treatment and Procedure

Treatment plan based on CT-simulation

Sources 1cm length, 0.7mm diam.

Activity per source 3 µCi

Local anesthesia

Timeline and Follow-Up

Alpha DaRT sources insertion

Removal after 14 to 21 days

Weekly **follow-up** during the treatment period

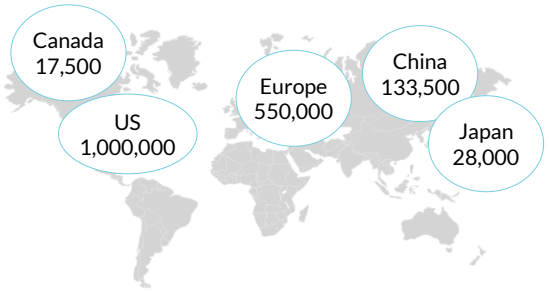
Sample size N = 86 patients

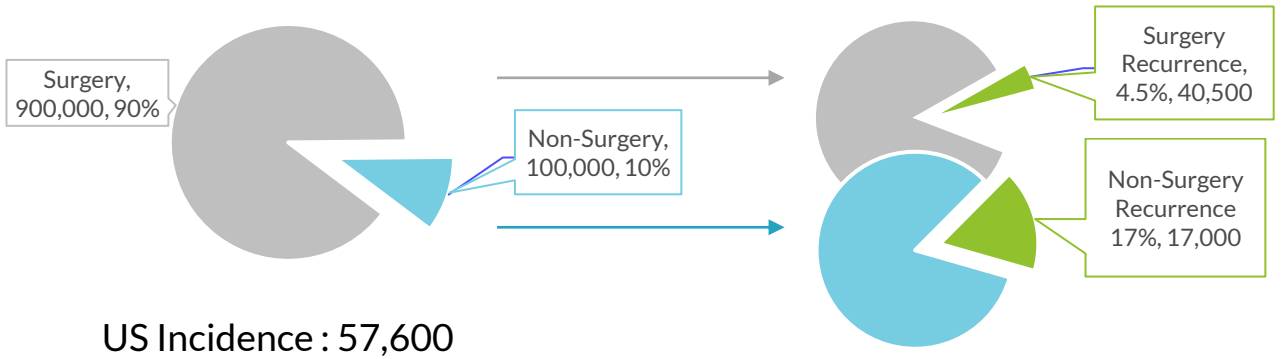
Applicable Market Size – Estimates of Annual Incidence Data

SCC / H&N Annual Incidence

US Incidence: ~1 million

US Applicable Mkt. Size



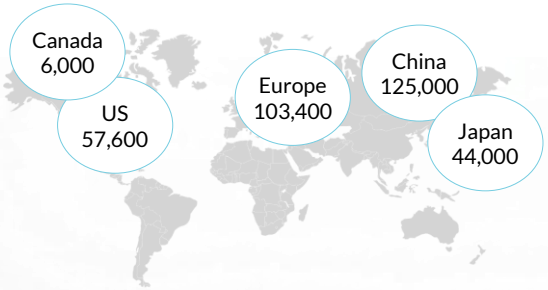


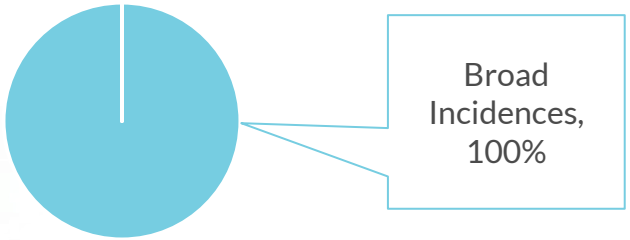
1L: 100,000
2L: 57,500

Pancreas Annual Incidence

US Incidence : 57,600

US Applicable Mkt. Size



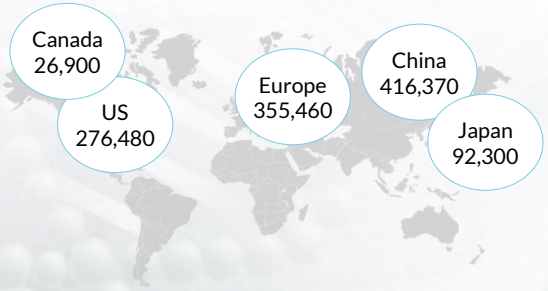


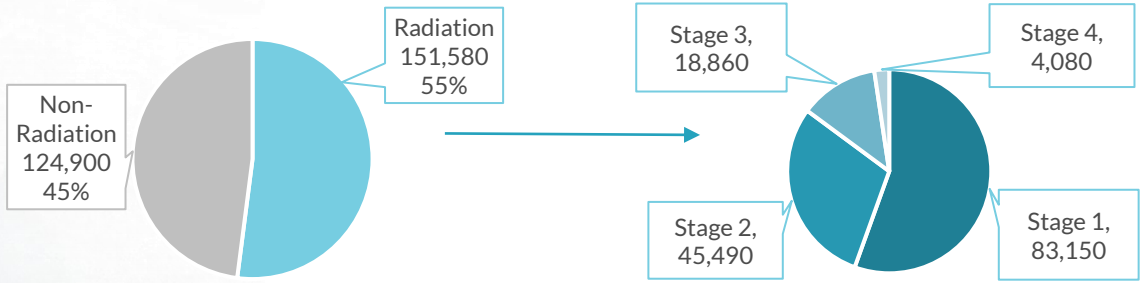
57,600

Breast Annual Incidence

US Incidence : 276,480

US Applicable Mkt. Size





151,580

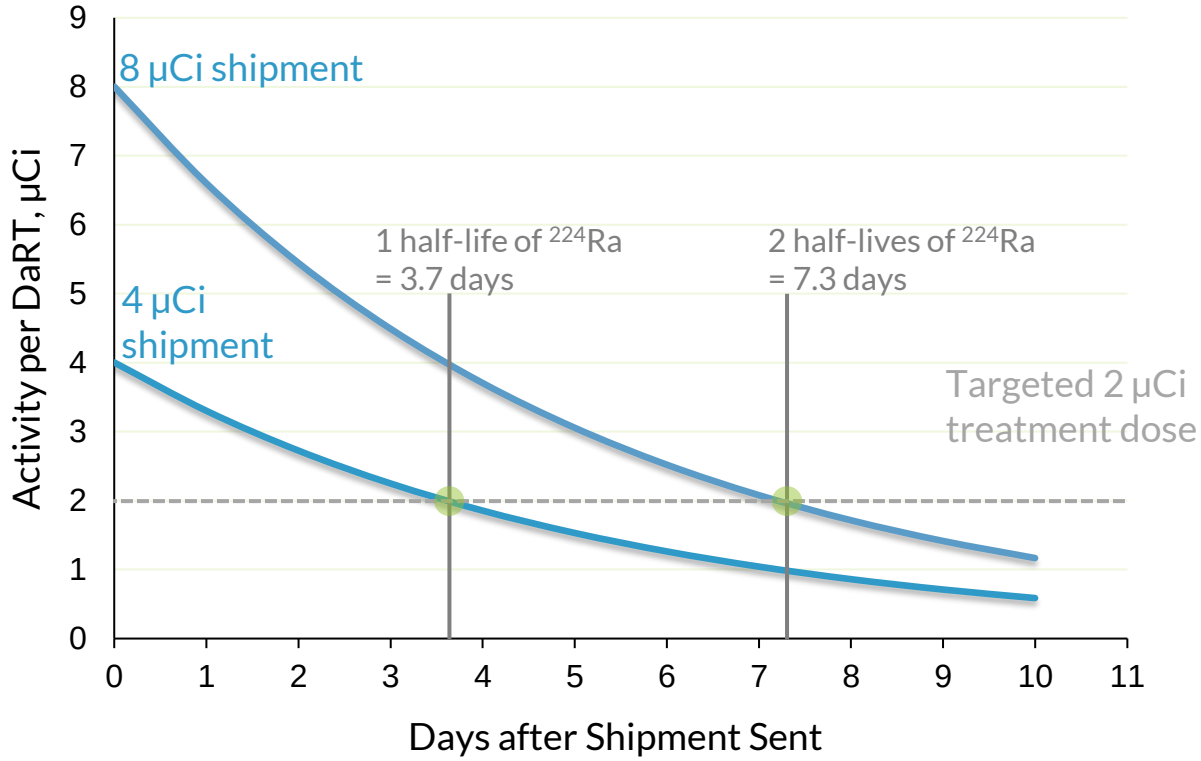
Source: Company estimates based on public industry sources.

Simple Radioactive Supply Chain

Delivery does not require any special handling and simple planning ensures on-time arrival

Alpha DaRT is shipped in Excepted Packages (low levels of radioactivity), and can therefore be dispatched in suitable applicators by standard courier, requiring no special handling or protective gear in transit

Alpha DaRT Radioactive Decay



Personalized treatment, shipped out on a per-patient basis
Simple planning ensures that an Alpha DaRT arrives with the required amount of ^{224}Ra available, even when allowing for radioactive decay, based on the known half-life of the ^{224}Ra

Global Manufacturing Facilities

For efficient commercial operations, we look to establish manufacturing operations in multiple regions of the world, to enable relatively short shipping times to our core markets

Jerusalem
(~400,000 sources per year – Ramping Up)

Lawrence, Massachusetts
(~125,000 sources per year - *Ramping Up)*

Togane, Japan
(In Design)

The Alpha Tau Executive Team

Strong management team with years of experience across the scientific and medical device space

Uzi Sofer
CEO & Chairman

- Co-Founder and CEO of BrainsWay (NASDAQ: BWAY)
- Medical device development, regulation, financing

Raphi Levy
Chief Financial Officer

- Former executive director in charge of healthcare investment banking in Goldman Sachs Israel

Prof. Itzhak Kelson
Chief Physics Officer

- Co-inventor of DaRT technology
- Emeritus professor of physics (taught at Tel Aviv University, Yale University, Weizmann Institute etc.)

Prof. Yona Keisari
Chief Scientific Officer

- Co-inventor of DaRT technology
- Professor of Immunology and Microbiology at Tel Aviv University, former NCI Post Doc Fellow

Robert Den, MD
Chief Medical Officer

- Radiation oncologist and Associate Professor at Thomas Jefferson University Hospital
- Medical degree from Harvard Medical School

Amnon Gat
Chief Operations Officer

- >20 years experience in medical devices and healthcare
- Marketing strategy specialist

Ronen Segal
Chief Technology Officer

- >20 years of top leadership roles, including medical device industry
- Chairman of the BSMT Consortium

Board of Directors

Diverse mix of cancer therapeutic, medical device and financial expertise providing value-added oversight and guidance to corporate leadership

Uzi Sofer
CEO & Chairman

- Co-Founder and CEO of BrainsWay (NASDAQ: BWAY)
- Medical device development, regulation, financing

Michael Avruch
Director

- Expert in financing and restructuring
- CEO & CFO experience

Morry Blumenfeld
Director

- Former managing director at GE Healthcare, CEO of Quescon Consultants, Founding partner of Meditech Advisors Management, director at Mako

Meir Jakobsohn
Director

- Founder of Medison Ltd.,
- Representing Amgen, Biogen, etc. for the marketing and distribution of their products

Alan Adler
Director

- 14 Years at McKinsey
- Senior Partner Evergreen Venture Capital
- Chairman and CEO of Oridion until its sale to Covidien

Peter Melnyk
Director

- Former Chief Commercial Officer at Novocure
- CEO of Fortovia Therapeutics
- Former Neuroscience marketing director at Bristol-Myers Squibb

Ruth Alon
Director

- Former founder/chair, Israel Life Science Industry
- Former/current board/chair of multiple companies, e.g., Brainsgate, Vascular Biotech
- Former GP, Pitango VC

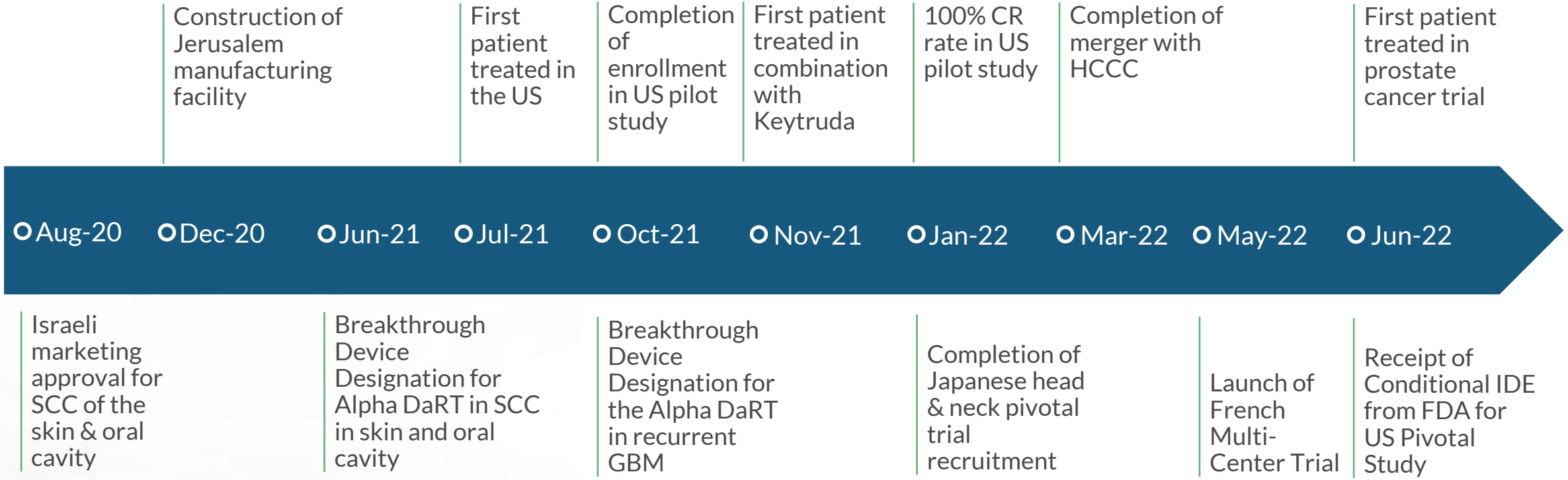
Dr. David M. Milch
Director

- Former HCCC Chairman
- Active medical investor
- MD from Harvard Medical School

Significant Industry Experience:

BrainsWay · GE Healthcare · NANOX X-RAY REIMAGINED · MAKO SURGICAL CORP · Pfizer · novocure · Oridion · Allium Urological Solutions · pitango VENTURE CAPITAL · McKinsey&Company · MEDISON Delivering Innovative Healthcare · INSIGHTEC · evergreen VENTURE PARTNERS · Bristol Myers Squibb · FORTOVIA THERAPEUTICS · VBL therapeutics · AlphaTAU

Continued Track Record of Execution



Anticipated Milestones

Geography	Indication	2H 2022	1H 2023	2H 2023
North America	Recurrent Cutaneous SCC (United States)	First patient treated in multi-center pivotal trial		Completion of multi-center pivotal trial recruitment
	Pancreatic Cancer (Canada) *(Tentative)*	First patient in feasibility trial	Interim read-out of feasibility trial	
Israel	Prostate Cancer		Read-out of prostate cancer trial data	
	Pancreatic Cancer	Initiate feasibility trial		
Japan	Head & Neck SCC	Potential submission of pivotal trial for PMDA review	Potential PMDA approval	

Clinical / Enrollment Regulatory

AlphaTAU

Saving Lives Globally