Phio Pharmaceuticals

Tumor-Injected Immunotherapy in Skin Cancer

Making Our Immune Cells More Effective in Killing Tumor Cells

Phio Corporate Presentation Feb 2026

www.phiopharma.com | Ticker: PHIO (NASDAQ)

Forward Looking Statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as "intends," "believes," "anticipates," "indicates," "plans," "expects," "suggests," "may," "would," "should," "potential," "designed to," "will," "ongoing," "estimate," "forecast," "target," "predict," "could" and similar references, although not all forward-looking statements contain these words. Examples of forward-looking statements contained in this press release include, among others, the possibility that our INTASYL® siRNA gene silencing technology will make the body's immune cells more effective in killing cancer cells, the timing of our studies and trials, including the planned toxicology study for PH-762, the expectation that commercially viable drug product will be available in 2026, the advancement of the drug development pathway of PH-762 toward an NDA approval, the potential for additional potential applications across the INTASYL portfolio, and statements regarding our commercial and clinical strategy, development plans and timelines and other future events.

These statements are based only on our current beliefs, expectations and assumptions and are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results may differ materially from those indicated in the forward-looking statements as a result of a number of important factors, including, but not limited to, the impact to our business and operations by inflationary pressures, rising interest rates, recession fears, the development of our product candidates, results from our preclinical and clinical activities, our ability to execute on business strategies, our ability to develop our product candidates with collaboration partners, and the success of any such collaborations, the timeline and duration for advancing our product candidates into clinical development, the timing or likelihood of regulatory filings and approvals, the success of our efforts to commercialize our product candidates if approved, our ability to manufacture and supply our product candidates for clinical activities, and for commercial use if approved, the scope of protection we are able to establish and maintain for intellectual property rights covering our technology platform, our ability to obtain future financing, market and other conditions and those identified in our Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q under the caption "Risk Factors" and in other filings the Company periodically makes with the SEC. Readers are urged to review these risk factors and to not act in reliance on any forward-looking statements, as actual results may differ from those contemplated by our forward-looking statements. Phio does not undertake to update forward-looking statements to reflect a change in its views, events or circumstances that occur after the date of this release, except as required by law.

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Phio Pharmaceutical's Value Proposition

- **Targets 2nd Largest Incidence of Solid Tumors (cutaneous squamous cell carcinoma)**
  ~1.8M incidents/ ~$20B addressable market)
  Treatment regimens unsatisfied
  Mortality approaches melanoma

- **Proprietary INTASYL® siRNA Gene Silencing Technology**
  Broadly patented into 2040's
  Demonstrated safe and effective in recently completed Phase 1b Trial

- **Ultra-Lean Virtual Infrastructure**
  Management's extensive experience in dermatology-related drug development
  History of FDA drug approvals and commercial launches

Phio's History of Innovation
Nobel Prize Winning Technology

Phio Co-Founder Awarded Nobel Prize for RNAi Discovery

↓

Resulted in the development of INTASYL® Portfolio

↓

Patented Short Interfering RNA drug technology

↓

Ability to precisely silences designated genes in the human genome

Making our Bodies' Immune Cells More Effective in Killing Tumor Cells

INTASYL® siRNA
Confirmed Results of Intratumoral Therapy

Selectively silences the signal from a designated gene

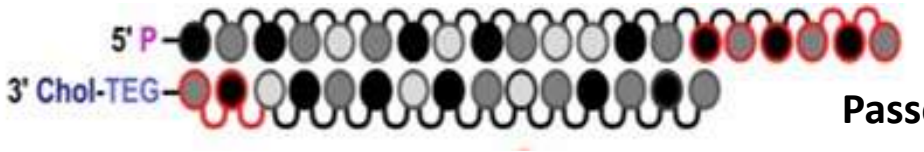
Suppresses protein production which in presence of tumors causes our immune cells to be ineffective

Re-activates the body's immune cells (T Cells)

Making immune cells more effective in killing tumors

INTASYL® Patented Chemistry Structure Asymmetric siRNA Duplex

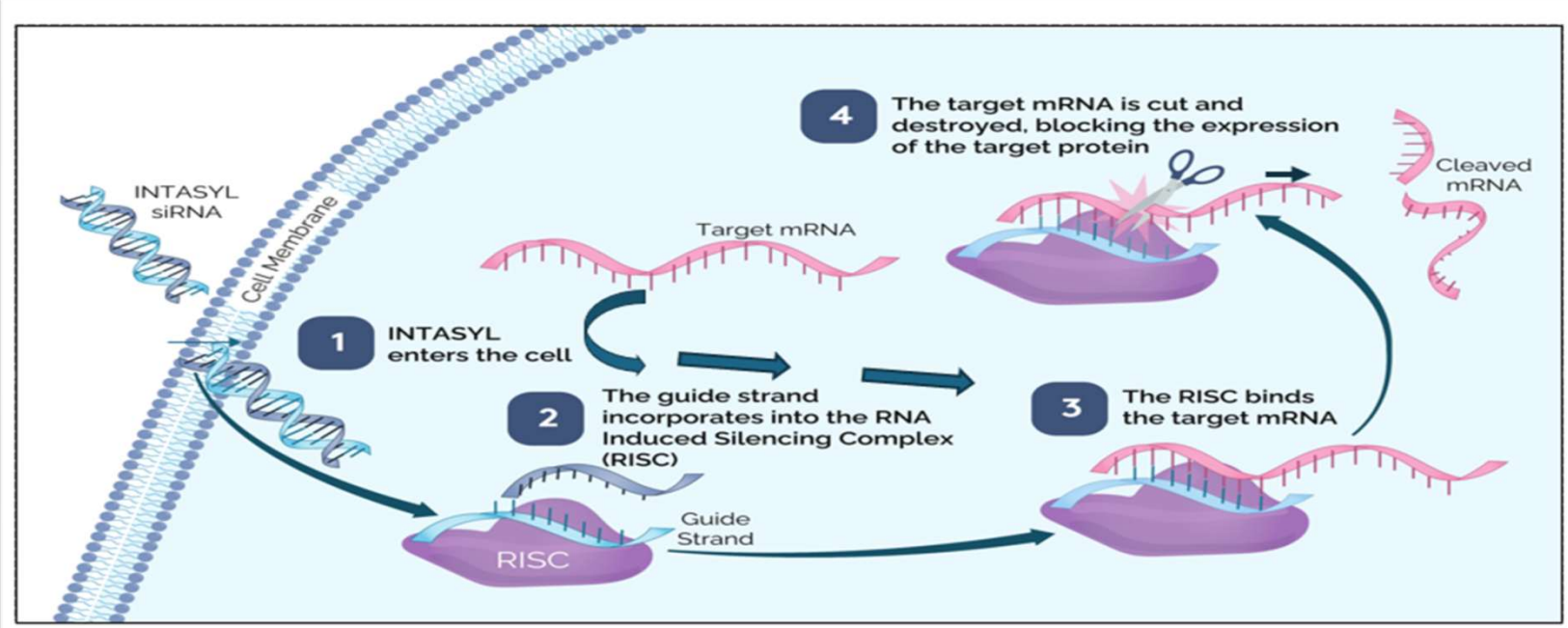
Selectively Designed and Sequenced Fragments of RNA



3 Critical Elements

Precise Sequence Design: Permits exceptional gene target specificity
Phosphorothioates: Protects stability
Cholesterol: Enables intact drug delivery to any cell type or tissue through endocytosis

INTASYL® siRNA Intratumoral Therapy Mode of Action



Intellectual Property
54 Patents Issued

Portfolio Encompasses Issued And Pending Patents In Key Countries

- INTASYL chemistry
- Specific drug compounds
- Specific gene targets
- Immuno-oncology and therapeutic indications

INTASYL® : The Versatility of Gene Silencing Platform Opportunities to Monetize

Therapeutic Target	Proprietary INTASYL Silencing Compounds
Oncology	PD-1, BRD4, CTLA4, TIGIT, LAG3, TIM3, CBLB, SHP-1, STAT-3, MDM2, ADORA2, MMP-1, CD96, CISH, CSK, DGKα, DGKζ, DMNT3A, HK2, IL-6, KLRC1, PD-L1, PRDM, PTEN, TBX21, TET2
Auto-Immune	
Hypertrophic Scarring	CTGF, COX2, TGFB1, TGFB2, SPP1
Cosmetic Pigmentation	TYR, COX2
Cosmetic Wrinkles	MMP1, COX2
HPV, HSV	BRD4

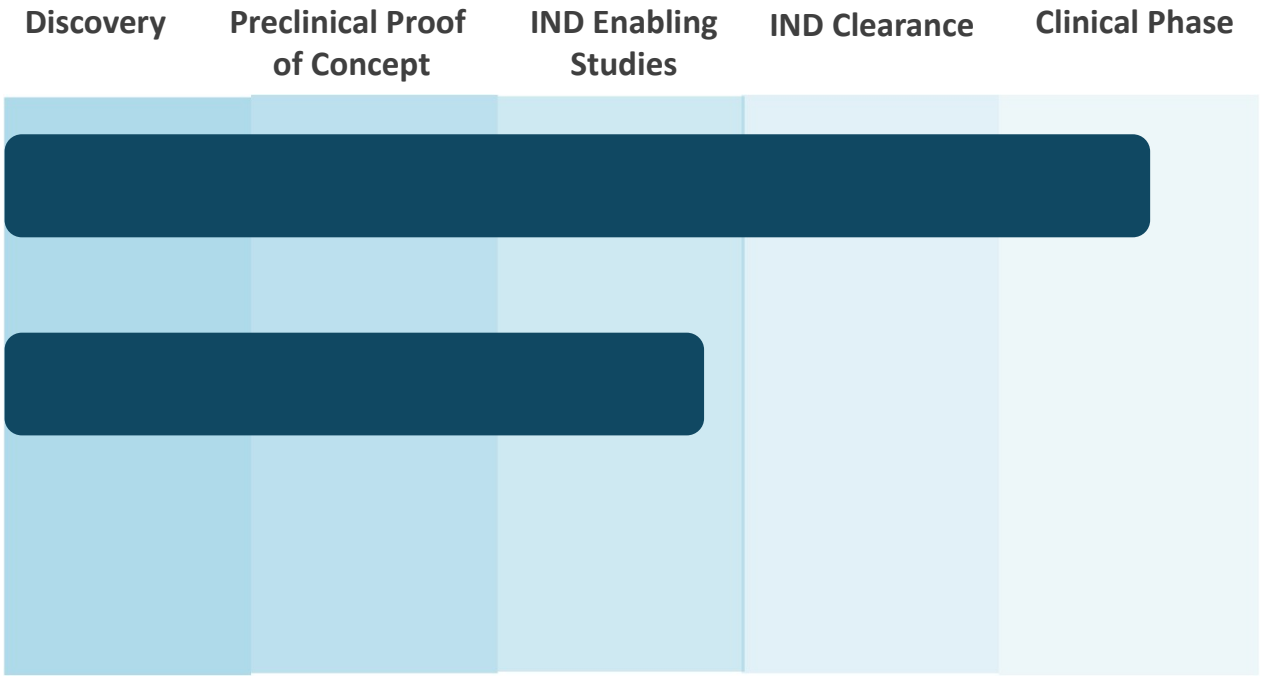
Phio Strategy

Internal Focus on Select Development Programs

Monetize Non-Strategic Portfolio via Out-License

Focused Self-Directed Clinical Development

Program



PH-762 PD-1 silencer

Phase 1b Study
Stages I & II cSCC
Stage IV cSCC, melanoma, and Merkel cell carcinoma

PH-894 BRD4 silencer

Potential Indications
Head and Neck SCC
Hepatocellular carcinoma (HCC)
HPV-related SCC
Prostate Cancer
Stage IV melanoma

PD-1 Gene Silencing in Skin Cancer Therapy

Intratumoral PH-762

Program Selection Rationale

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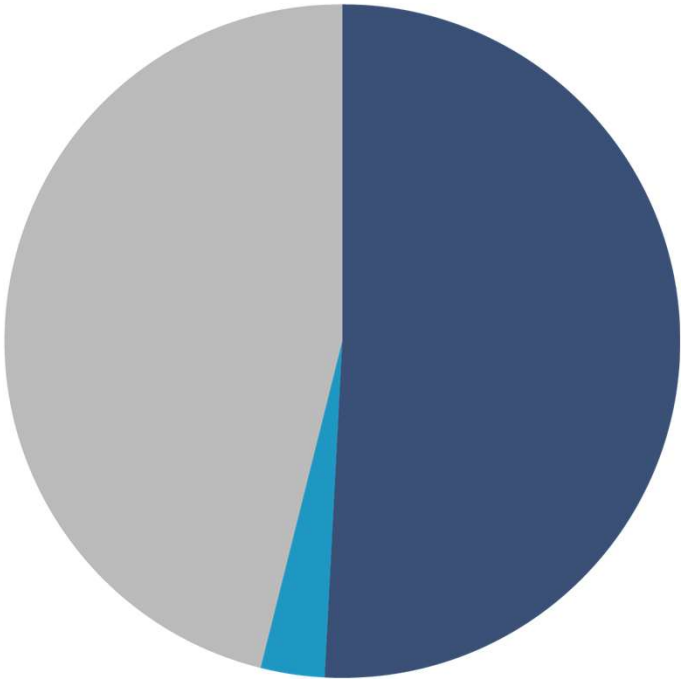
PH-762 Lead Program Selection Rationale
PD-1 Gene Silencing

Risk Mitigation	PD-1 validated in monoclonal antibody (mAB) skin cancer trials mAB systemically infused to attack PD-1 on tumor surface Intratumoral INTASYL® silences (turning off) PD-1 at its source in T-cell
Competitive Landscape	Limited number of novel clinical trials in cSCC being conducted

U.S. Market Opportunity in cSCC
Significant Incidence to All Solid Tumors[1]

All other solid tumors
(1.6M incidence[1])
46%

Melanoma
3%
(108K incidence[1])



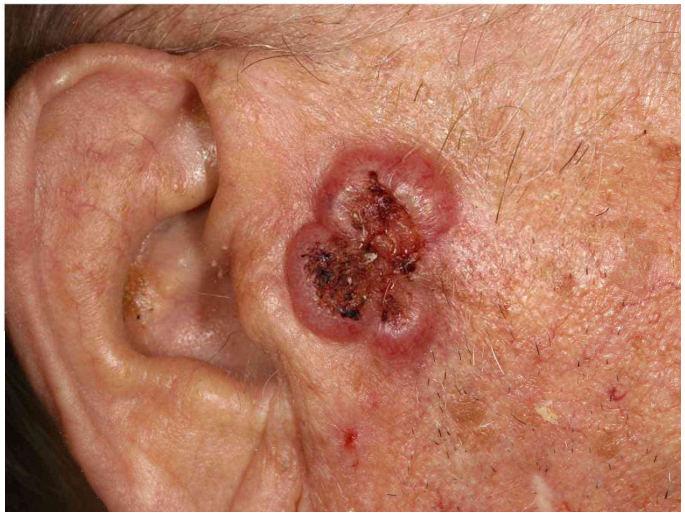
cSCC
51%
(1.8M incidence[2])

[1] Annual incidence in the U.S. excluding basal cell carcinoma (BCC), cancer.org, 2022
[2] skincancer.org, 2021

FDA Clearance for PH-762 IND
Market Opportunity

- **FDA IND clearance to study Stage IV melanoma and Merkel cell carcinoma, Stages I, II and IV cutaneous Squamous Cell Carcinoma (cSCC)**
- **~1.4 million incidences in cSCC Stages I and II (≤ 3 cm in length)**
- **Currently no FDA approved drug therapy for Stages I and II cSCC**
- **Invasive surgery is current standard of care**

Cosmetic/ Recovery Implications in Invasive Surgery Surgical Excision and Wound



Tumor size, location and patient's health presents a need for non-surgical option

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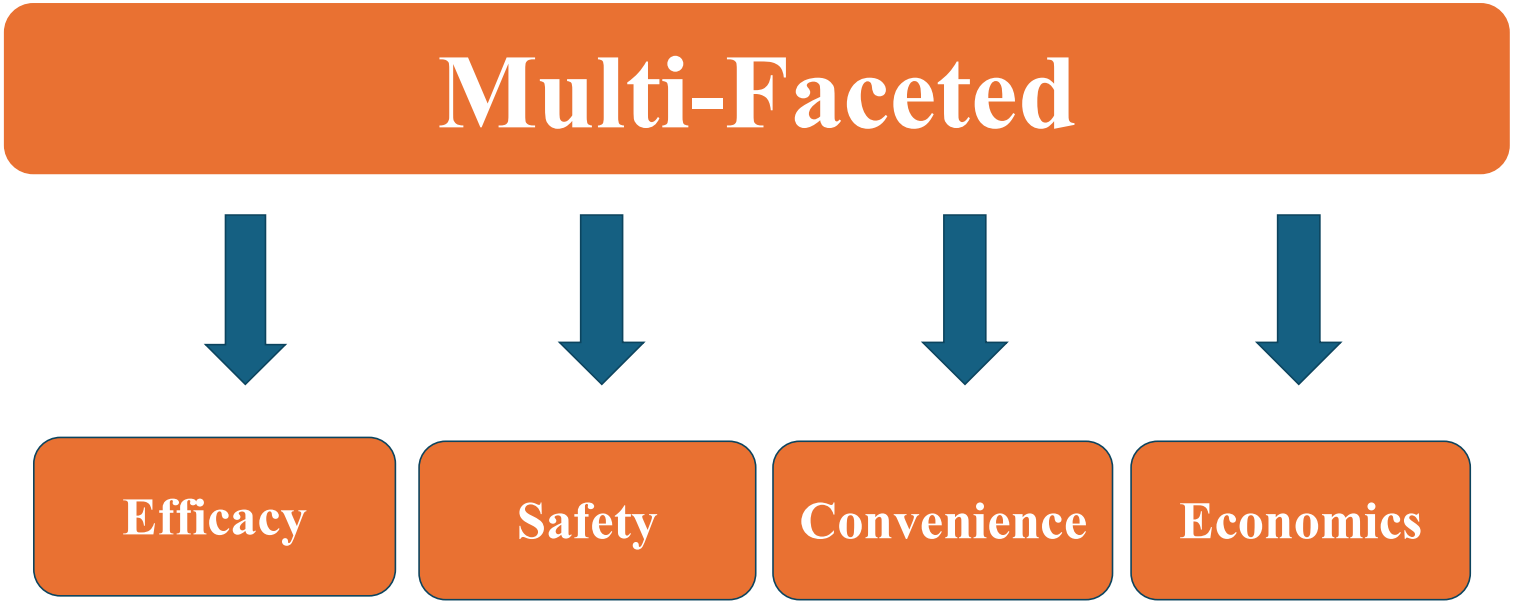
INTASYL® PH-762 Intratumoral Therapy Profile

PH-762 Phase 1b Dose-Escalating Trial
Purpose: Select Next Trial Dose for Safety & Pathology *

- **Design:** Up to 24 patients in 5 escalating dose concentration
  - 22 patients completed treatment
  - 4 intratumoral injections over 3 weeks with resection of residual lesion at week 5
  - Endpoints: Safety, Pathology Tumor Results, PK Analysis
- **Treatment Phase Completed: January 2026**
- **Investigation Sites:** Banner MD Anderson, Centricity Research, Integrity Research, Paradigm Clinical Research Centers, Skin Cancer and Dermatology Institute

*Clinicaltrials.gov NCT06014086

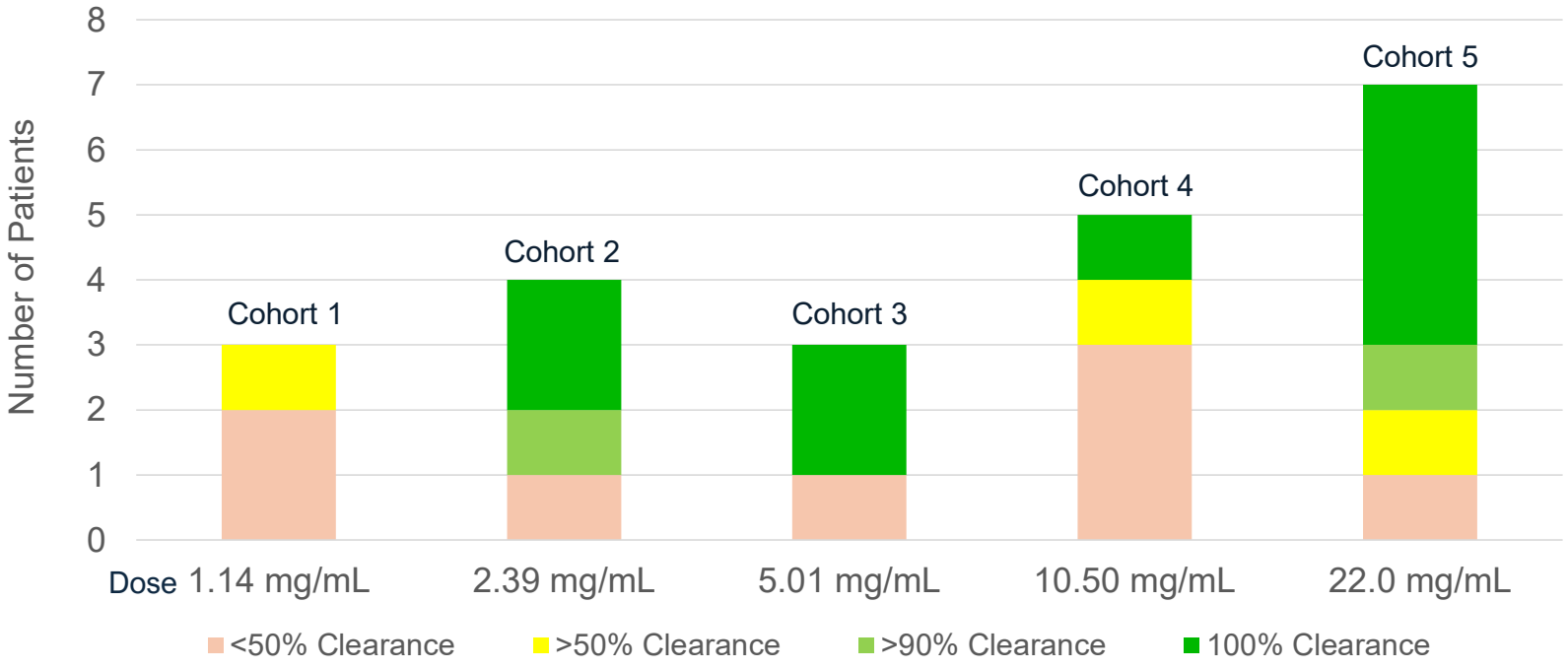
INTASYL® Self-Delivering Technology
PH-762 Value Proposition



Clinical Efficacy through Dose Escalation

Final Cohort yields 85% Pathological Response

100% Tumor Clearance in 4 of 6 Responders



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PH-762
Favorable Safety and Tolerability Profile

- **No immune related or treatment limiting toxicities in any patients to date through 5 dose escalating cohorts, a 20-fold increase in drug concentration**

- **Direct injection into tumor (intratumoral) essentially eliminates off-target SAEs typically associated with systemic infusion of monoclonal antibodies**

- **Limited drug quantity is injected in sterile buffered saline solution**
  -No lipid nanoparticles or viral vectors in formulation

PH-762
Patient/Physician Convenience

- **Administered in physician's office**
- **Avoids logistics of systemic infusion centers**
- **Minimizes aftercare associated with surgery**
- **Flexible dosing to accommodate lesion size**

PH-762
Economics

- **Office visits drive MD practice economics**
- **Relatively low production cost**
- **U.S. sourcing for API and drug product**

PH-762 Intratumoral Therapy for cSCC
Tissue Sparing with Safety and Convenience

- **Eliminates or Shrinking the Tumor**
  - -Minimizes surgical excision and reconstructive surgery
  - -Preserves skin integrity, promotes faster healing and reduces pain
- **Favorable Safety Profile**
- **Patient Convenience in an MD Office**

INTASYL® PH-894 Intratumoral Therapy Profile

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Secondary Program
Intratumoral PH-894: BRD4 Gene Silencer

- **BRD4 Implicated in Numerous Potential Cancers**
  -Melanoma, Prostate, Breast, Cervical, Lung, Liver, Head and Neck, cSCC
- **PH-894 has a Dual Mode of Action**
  -Direct tumor killing
  -Activation of immune cells
- **PH-894 is Precisely Selective for BRD4 Gene**
  -Eliminates toxicity associated with other previously studied non-selective development compounds
  -PH-894 has clean toxicology profile in non-human primate
- **PH-894 has completed the required IND enabling studies**

Phio Pharmaceuticals

INTASYL® siRNA Precision Silencing Technology

Established safety and efficacy for PH-762
Extensive Intellectual Property
Leadership Validated by Track Record
Cutaneous Carcinomas Market ~$20 Billion

Making our Immune Cells More Effective in Killing Tumor Cells

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