



*Developing the Next Generation
of Immuno-Oncology Therapeutics*

RXi Pharmaceuticals

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Forward Looking Statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “believes,” “anticipates,” “plans,” “expects,” “indicates,” “will,” “intends,” “potential,” “suggests” and similar expressions are intended to identify forward-looking statements. These statements are based on RXi Pharmaceuticals Corporation’s (the “Company”) current beliefs and expectations. Such statements include, but are not limited to, statements about the future development of the Company’s products (including timing of clinical trials and related matters associated therewith), the expected timing of certain developmental milestones, the reporting of unblinded data, potential partnership opportunities, the Company’s competition and market opportunity and pro forma estimates. The inclusion of forward-looking statements should not be regarded as a representation by the Company that any of its plans will be achieved. Actual results may differ from those set forth in this presentation due to risks and uncertainties in the Company’s business, including those identified under “Risk Factors” in the Company’s most recently filed Year-End Report on Form 10-K and in other filings the Company periodically makes with the U.S. Securities and Exchange Commission. The Company does not undertake to update any of these forward-looking statements to reflect a change in its views or events or circumstances that occur after the date of this presentation.

RXi is Developing the Next Generation of Immuno-Oncology Therapeutics



Cancer is a global killer.

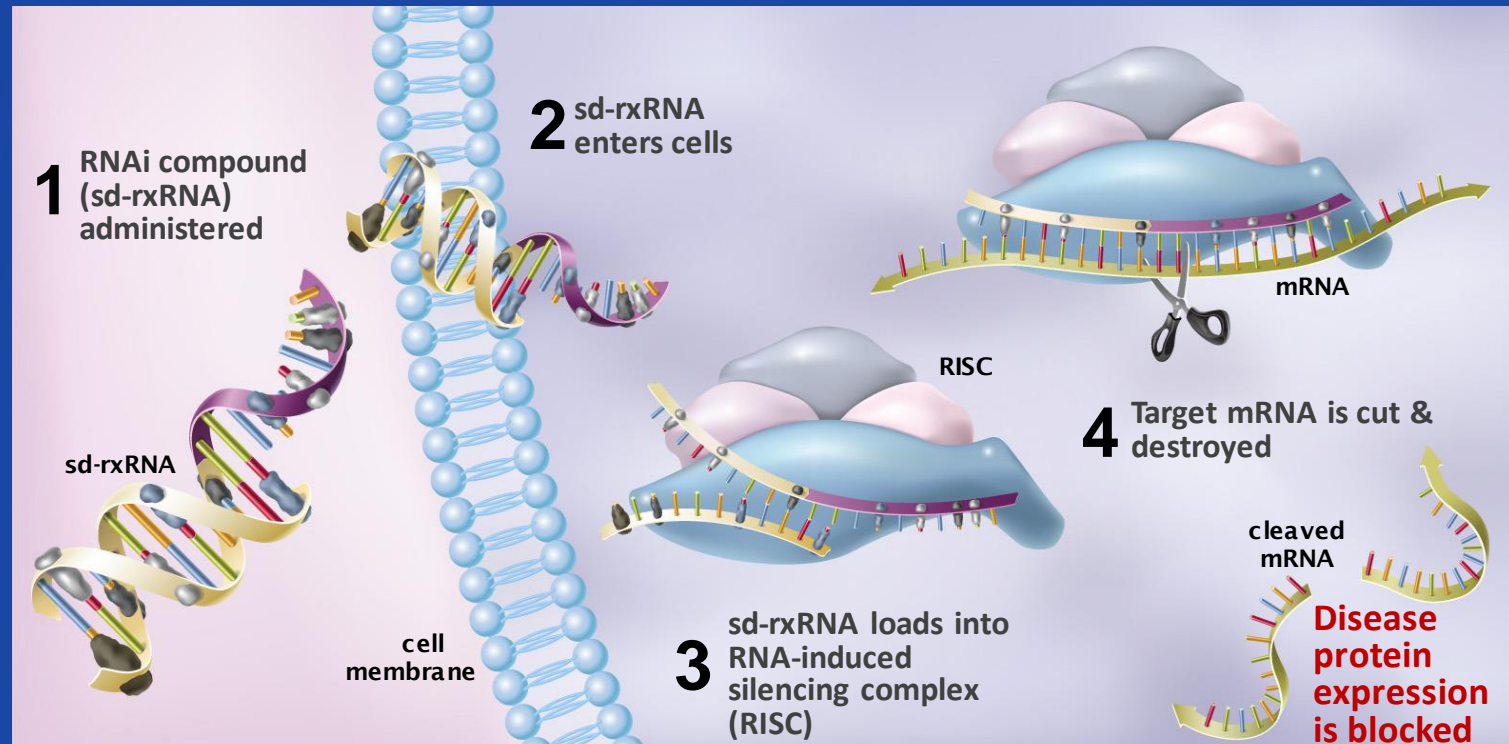
Existing treatment approaches have inherent limitations and serious side effects.

RXi's therapeutic platform can improve existing treatment paradigms with enhanced tumor killing activity to attack cancer.

sd-rxRNA: Next Generation of Immuno-Oncology Therapeutics

RXi has developed a self-delivering RNAi (sd-rxRNA[®]) therapeutic platform

sd-rxRNA can penetrate immune cells, where antibodies fall short, and block the expression of disease proteins



sd-rxRNA: Weaponizing Therapeutic Immune Cells to Treat Cancer

Immune Cells

Precise and selective programming of cells for ACT

Optimized cells

Improved cell based immuno-therapy

TILs

sd-rxRNA

rx-TILs

NKs

Existing cell expansion / manufacturing paradigms*

rx-NKs

TCR / CAR T

* no delivery vehicle or electroporation required
* compatible with freeze/thaw cycles

rx-TCR / rx-CAR T

Solid Tumors

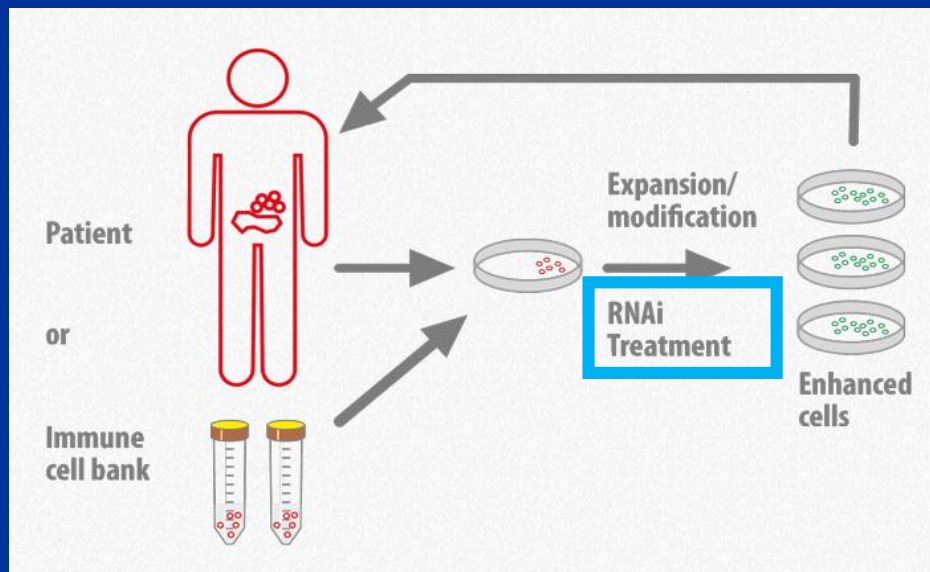
- Checkpoint inhibition
- Enhancing long-term survival and “metabolic fitness” of immune cells

Blood Cancers

- Enhancing long-term survival and “metabolic fitness” of immune cells

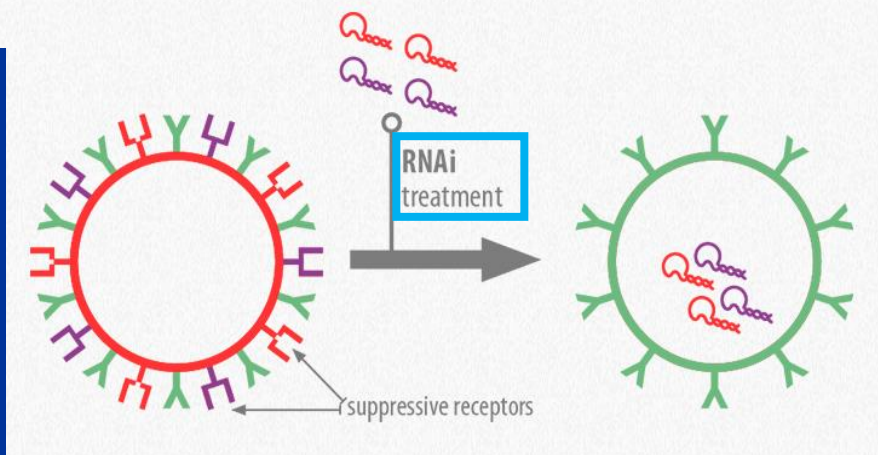
sd-rxRNA: Attack Cancer using Adoptive Cell Transfer Method

*Improving Immune Effector Cells with **RNAi***



***sd-rxRNA** to Improve Cell Activity and Longevity*

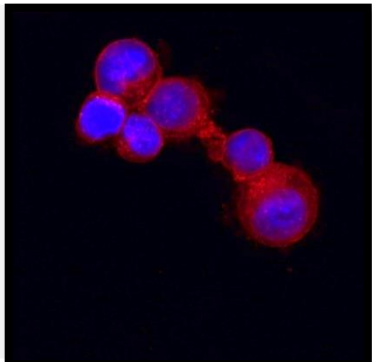
***sd-rxRNA** Enhances Tumor Killing Activity of Immune Cells*



Demonstrated Broad Applicability of sd-rxRNA

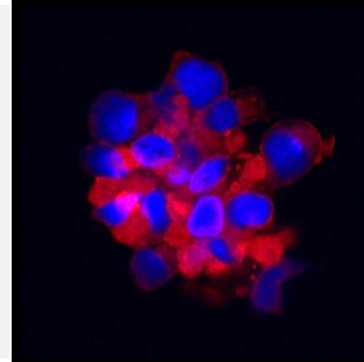
Empower existing clinical treatment paradigms and expand applicability of engineered cells

Human T Cells



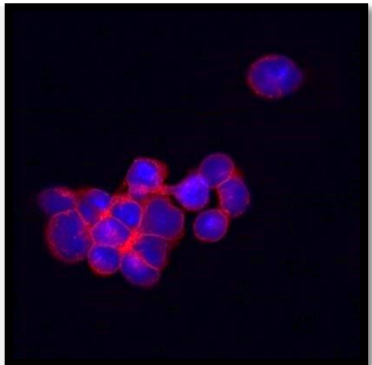
- TILs for ovarian cancer or melanoma
- HSCT for modulation of GvHD
- γ/δ T cells

Engineered T Cells



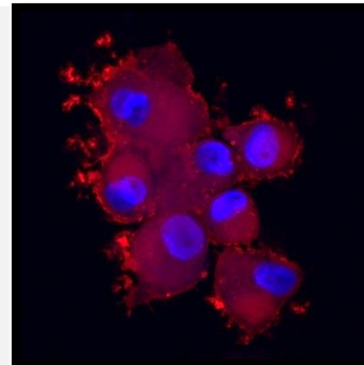
- CAR T
- TCR
- Checkpoint inhibition and optimization for persistence and fitness of T cells

Human NK Cells



- Autologous or Allogeneic Natural Killer (NK) cells
- Cytokine Induced Killer (CIK) cells
- Engineered NK or CIK

Dendritic Cells



- Dendritic cell cancer vaccines






Internal Development Pipeline

Developing the Next Generation of Immuno-Oncology Therapeutics

INTERNAL	Target	Indication	Disc.	Preclin	Clinical
RXI-762	PD-1*	Solid Tumors			
RXI-804	TIGIT*	Solid Tumors			
Other checkpoints	Multiple*	Solid Tumors			
Cell differentiation	Multiple*	Blood cancers and Solid Tumors			

*In ACT

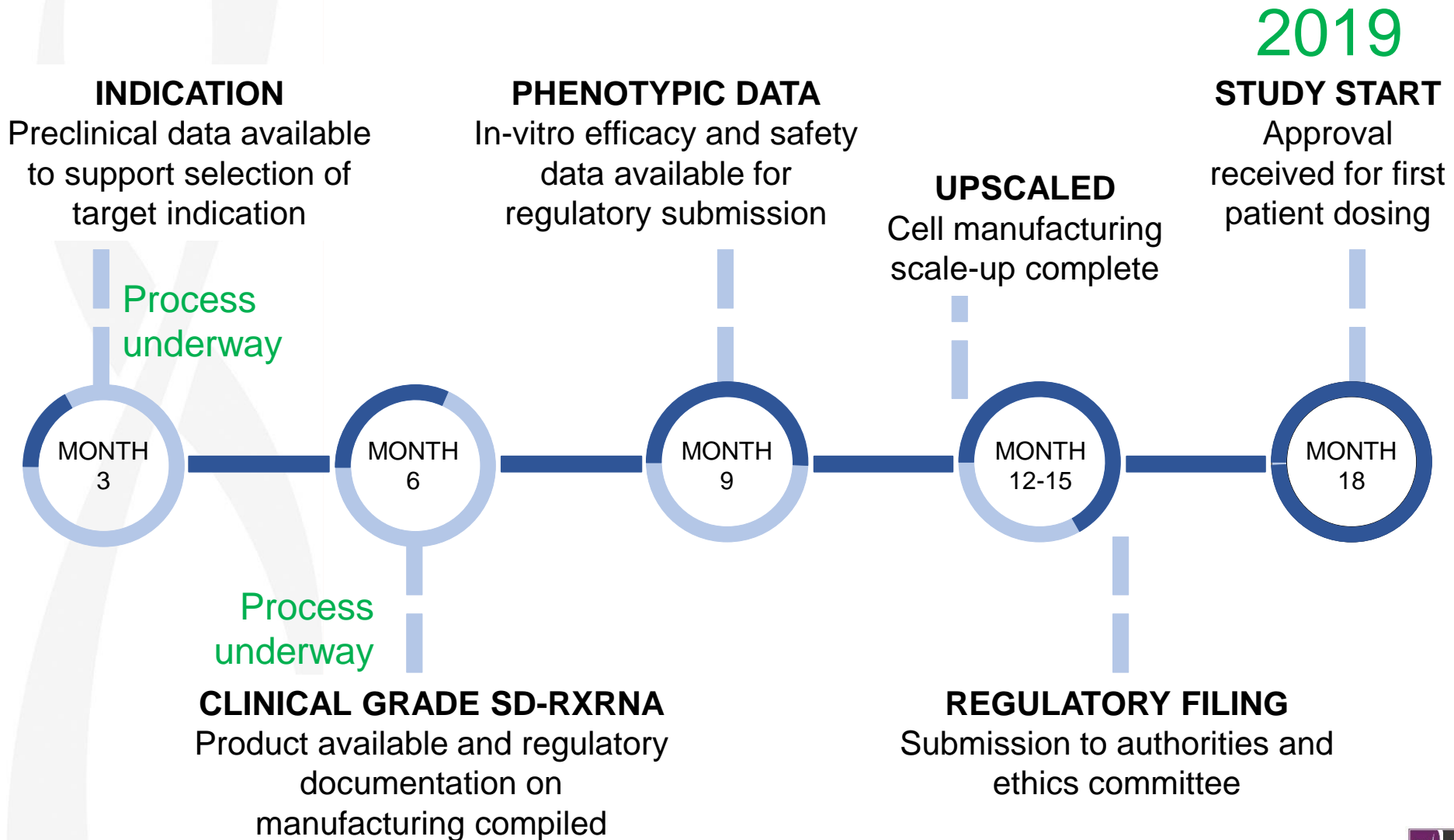
Collaborations with Leading Cancer Centers and Cancer Focused Biopharma

EXTERNAL	SCOPE		STATUS
	TILs	sd-rxRNA against various cancer types (incl. melanoma, ovarian cancer)	Pilot study results are promising; preclinical studies underway.
	Oncology models	sd-rxRNA technology platform for use in cancer treatments	Pilot study results are promising; preclinical studies underway.
	TCRs	sd-rxRNA and TCRs for next generation of recombinant T cell therapies	Pilot studies underway
	Combination therapy	Exploring synergies between PCIs fimaNAc and sd-rxRNA	Synergy confirmed; preclinical studies underway.
	Oncology models	Syngeneic mouse models	Pilot studies underway

RXII: Positioned for Success with Safe and Proven sd-rxRNA Platform

- Improved development landscape for cancer therapeutics
 - Active government support (Cancer Moonshot)
 - Expedited reviews by FDA
- Clinically proven safety of sd-rxRNA by direct local injection
- The field of immunotherapy is evolving towards combination approaches
 - RXi has demonstrated the sd-rxRNA platform can downregulate multiple targets at once
- Treatment of TILs with an anti-PD1 sd-rxRNA results in enhanced tumor killing activity in an *in vitro* melanoma model
- sd-rxRNA is compatible with existing cell manufacturing processes and does not significantly increase cost

Near Term Goal: Enter Clinical Development 12-18 Months



Competitive Landscape

RXi: Primed for Success

- No known RNAi-based therapeutics approved yet to treat cancer
- Clinically proven check-point targets and large market but all antibodies with known inherent limitations

Current I-O Treatments Yield Billions¹

Large Valuation of Companies Using Lesser Technologies to Improve ACT

Antibody Treatments

- BMS
 - Opdivo[®] (anti-PD-1)
 - Yervoy[®] (anti-CTLA-4)
- Merck
 - Keytruda[®] (anti-PD-1)

- Iovance Biotherapeutics
 - \$1.5B MC
 - Optimizing autologous TILs

- Fate Therapeutics
 - \$400M MC
 - *Ex-vivo* T-cell Modulation (Collaboration w/ Juno)

- Intellia Therapeutics
 - \$1B MC
 - CRISPR/ Cas 9 CAR-T modification (Collab. w/ Novartis)



Financial Overview

Cash and cash equivalents*
(a/o 12/31/2017) ~\$3.6M

Burn rate ~\$2.0-\$2.5M/quarter

Cash runway
(Assuming current NASDAQ limitations with use of equity line) Q2/Q3 2018

Cash runway
(Assuming full use of \$15M equity line available) Q4 2019

Common shares outstanding
(a/o 3/15/2018) ~2.6M

Market Cap
(a/o 3/15/2018) ~\$13.0M

**Unaudited*

RXII: Developing the Next Generation of Immuno-Oncology Therapeutics

New Class of Powerful Therapeutics

First RNAi drug approval expected in 2018

Proven Platform

Safety, efficacy (clinical and pre-clinical) and long-term effect in cancer models

Potential 3-5x Return on Investment

12-18 months

Improved Regulatory Landscape

Approval with Phase 2 data using ACT (Novartis)

Multi-billion market potential

Large Deals with Early Pipelines

Gilead/Kite: \$11B
Celgene/Juno: \$9B