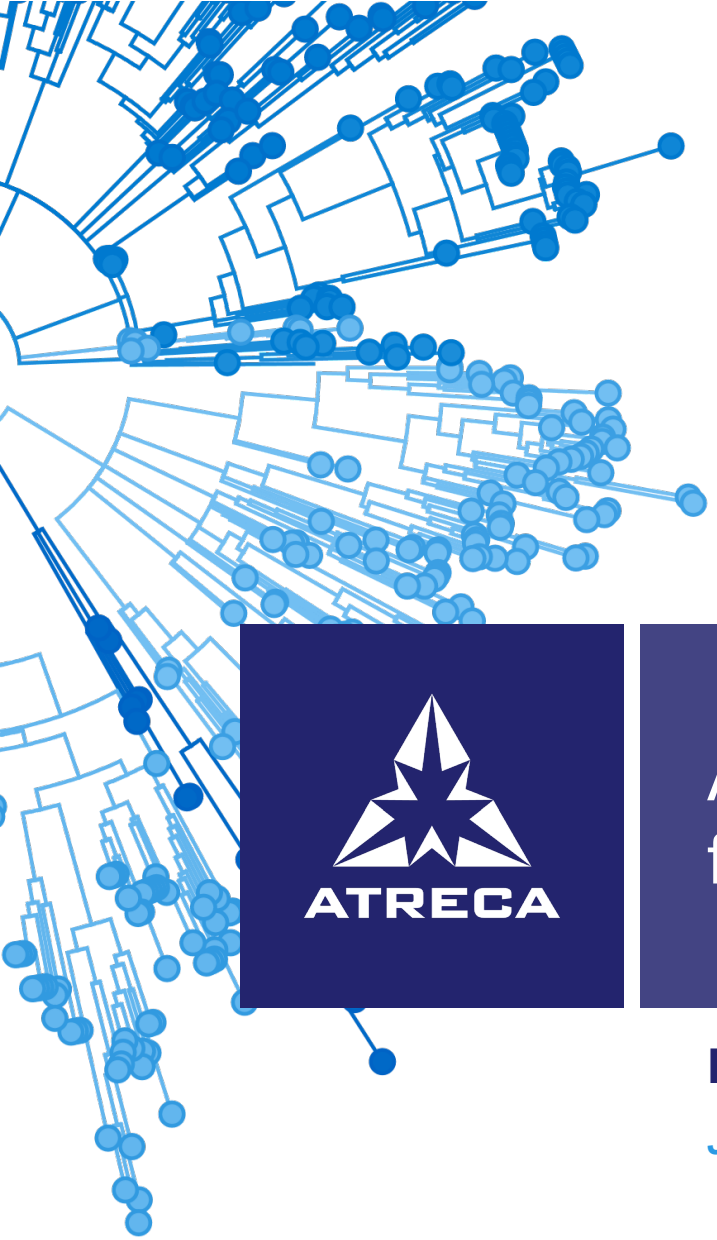


ATRC-101: A Novel Clinical-Stage Candidate for the Treatment of Solid Tumors

Preclinical / Translational Webinar

June 15, 2020

Legal Disclaimer

This presentation and the accompanying oral commentary contain forward-looking statements regarding our strategy and future plans, including statements regarding the development of ATRC-101 and our clinical and regulatory plans, and the timing thereof. These forward-looking statements include all statements other than historical facts including, but not limited to, statements regarding our plans, objectives, representations and contentions and typically are identified by words such as "believe,'' 'continue," "may,'' ''plan,'' ''potential,'' "likely," ''would'' or the negative of these words or other similar terms or expressions, although some forward-looking statements are expressed differently. Our actual results may differ materially from those indicated in these forward-looking statements due to risk and uncertainties related to the initiation, timing, progress and results of our research and development programs, preclinical studies, any clinical trials and Investigational New Drug and other regulatory submissions; our expectations regarding the activity of ATRC-101 and its potential as a monotherapy and in combination with checkpoint inhibitors and select chemotherapeutics; our ability to obtain and maintain regulatory approval of any of our current or potential future product candidates; and the implementation of our business model and strategic plans for our business, technologies, and current or potential future product candidates.

You should not rely on forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this presentation and the accompanying oral commentary primarily on our current expectations and projections about future events and trends that we believe may affect our business. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties and other factors described in greater detail in our most recent Annual Report on 10-K and Quarterly Report on Form 10-Q filed with the U.S. Securities and Exchange Commission, and may cause our actual results, performance or achievement to differ materially and adversely from those anticipated or implied by our forward-looking statements

Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this presentation and the accompanying oral commentary. The results, events and circumstances reflected in the forward-looking statements may not be achieved or occur, and actual results, events or circumstances could differ materially from those described in the forward-looking statements.

This presentation and the accompanying oral commentary discuss our current product candidate under clinical investigation and which has not yet been approved for marketing by the U.S. Food and Drug Administration. No representation is made as to the safety or effectiveness of our current product candidate for the use for which it is being studied.

The forward-looking statements made in this presentation and the accompanying oral commentary relate only to events as of the date on which the statements are made, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. We undertake no obligation to update any forward-looking statements made in this presentation and the accompanying oral commentary to reflect events or circumstances after the date of this presentation and the accompanying oral commentary or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. We qualify all of our forward-looking statements by these cautionary statements.

Agenda

- Overview of discovery platform and summary of new data and info
- ATRC-101: A novel target
- RNP complexes in human immune responses
- ATRC-101: Activity and novel mechanism of action
- ATRC-101: Clinical development
- Summary and conclusions
- Q&A

RNP, ribonucleoprotein.

Today's speakers

John Orwin

President and CEO

Tito Serafini PhD

Chief Strategy Officer

Jonathan Benjamin MD PhD

VP, Clinical Research

Available for questions

N. Michael Greenberg PhD

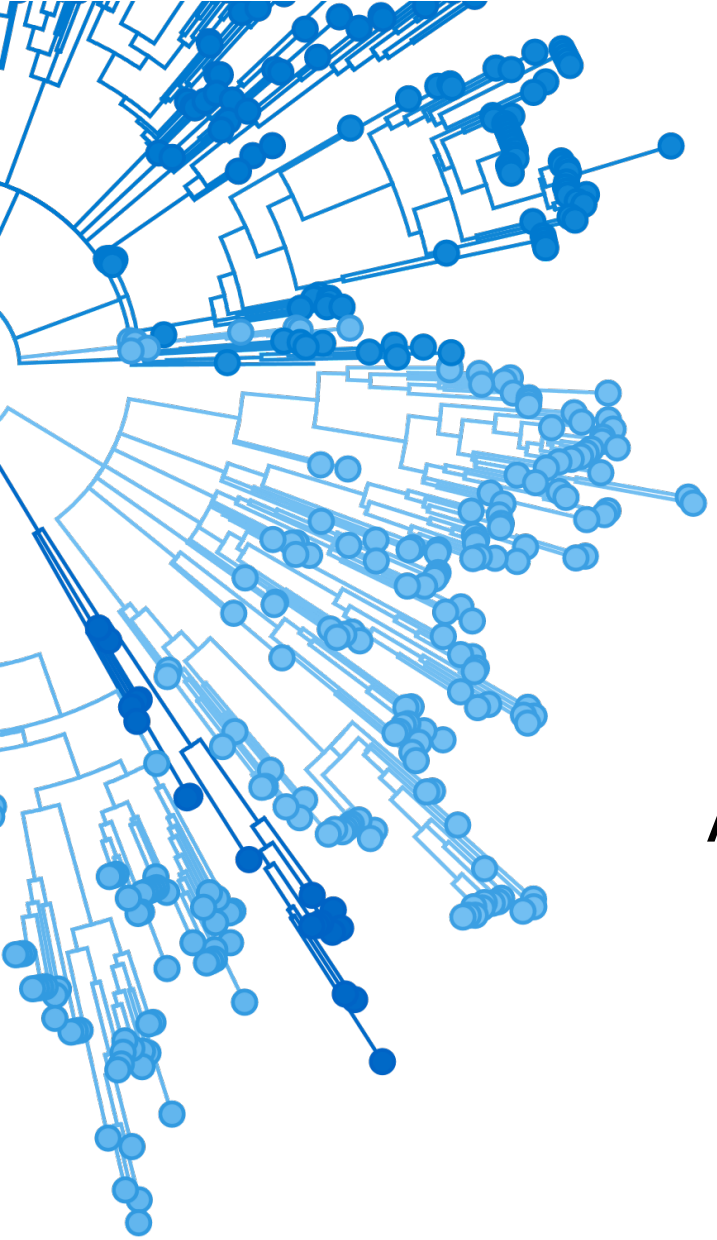
Chief Scientific Officer

Daniel Emerling PhD

SVP, Research

Herb Cross

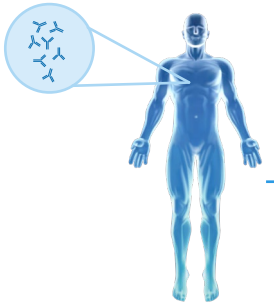
Chief Financial Officer



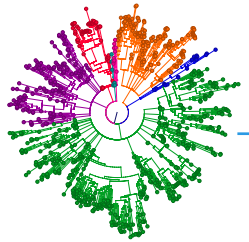
Atreca Discovery Platform

Atreca platform overview

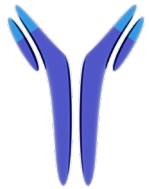
The **HUMAN IMMUNE SYSTEM** tells us what is important



"Responder" with anti-tumor immune response

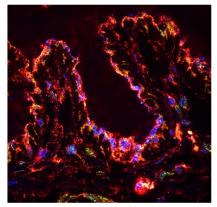


Interrogation of the active B cell response at the **single-cell** level



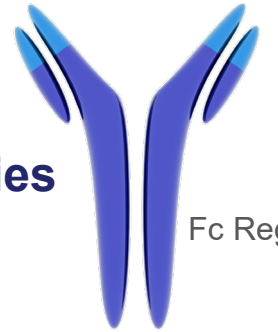
Identification of novel antibody–target pairs

Selection & Screening



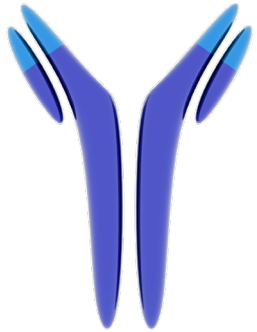
Currently **>1800 "hit"** antibodies against non-autologous "public" **targets**

Hit Antibodies

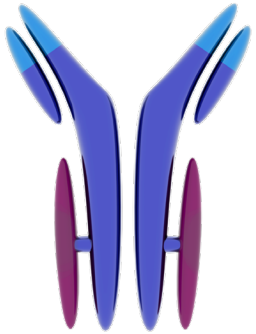


Weaponization

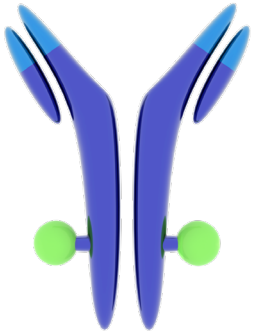
Leads



Activating Fc



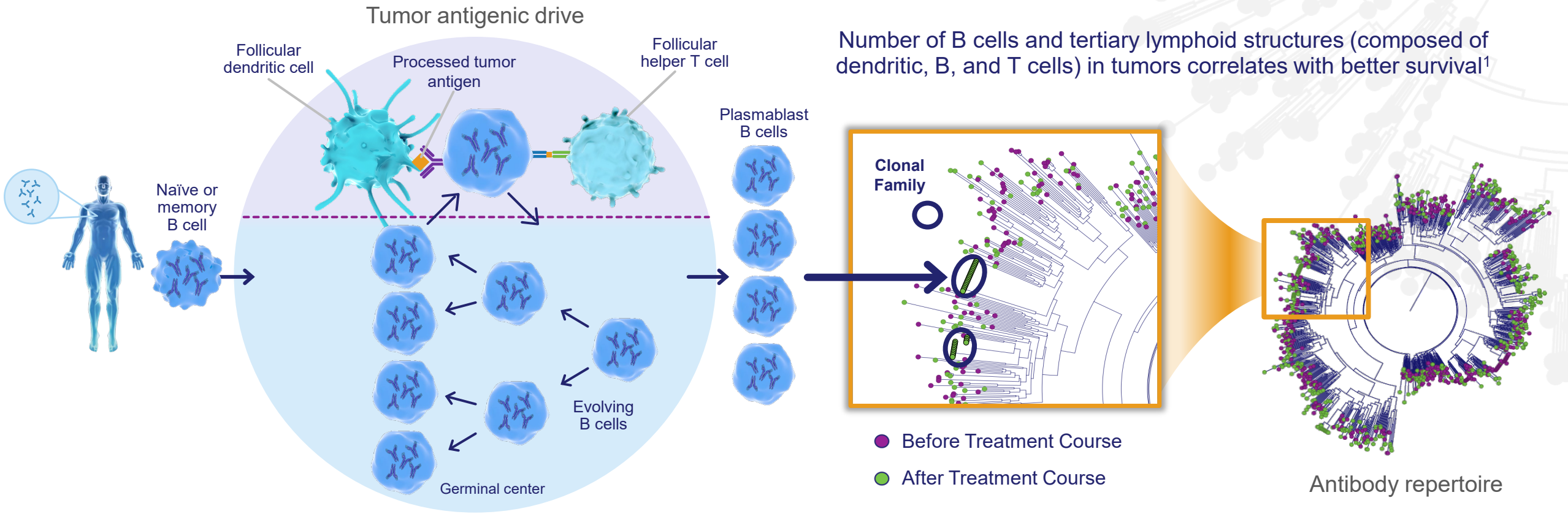
Fc + binding domain (e.g., T cell engager)



Fc + small molecule (e.g., ADC)

ADC, antibody-drug conjugate.

B cells and generation of plasmablasts in anti-tumor immune responses



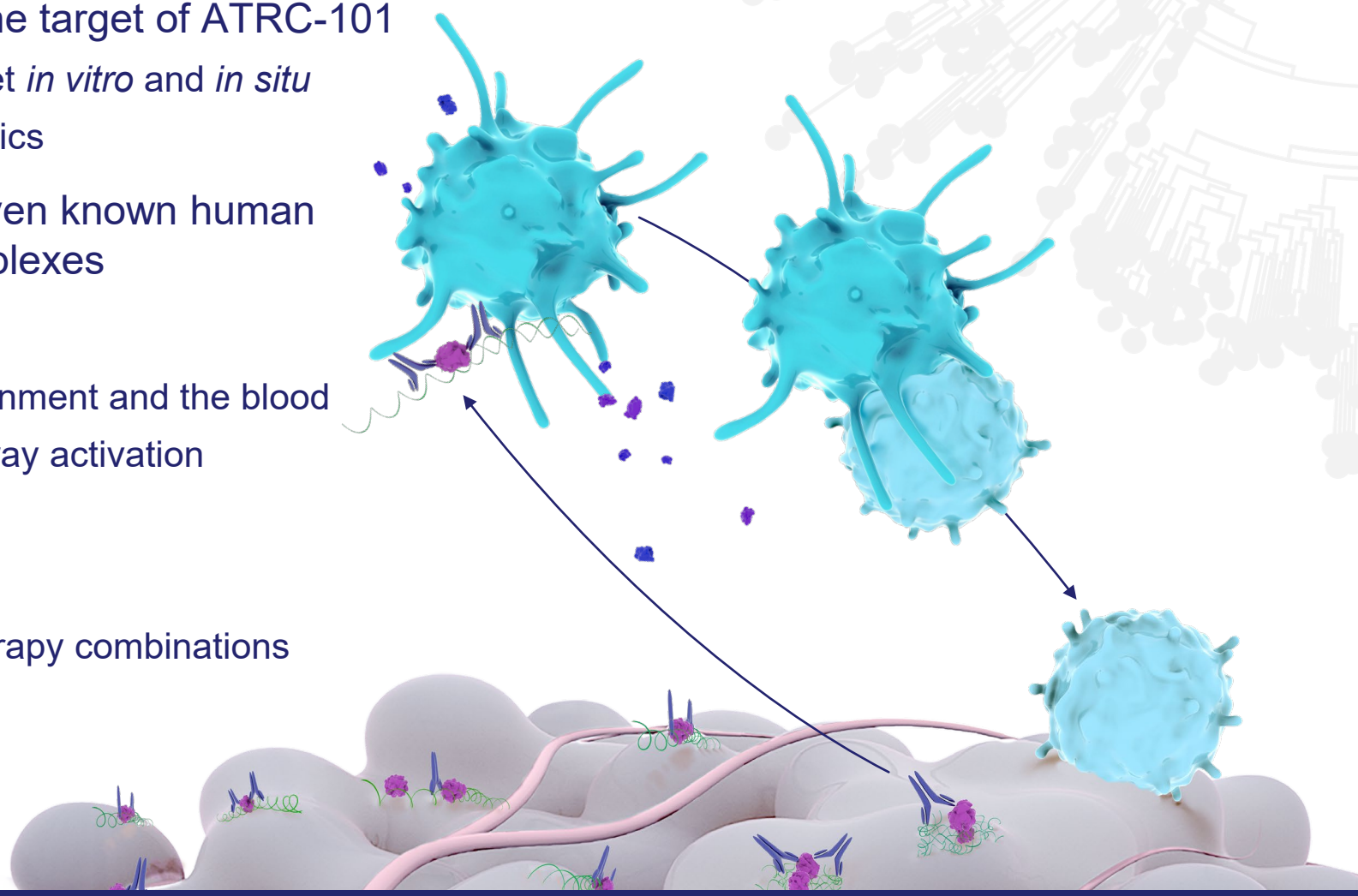
Number of B cells and tertiary lymphoid structures (composed of dendritic, B, and T cells) in tumors correlates with better survival[1]

Analyses of plasmablasts generated in cancer patients indicate that these patients have an antigen-driven B cell response similar to those driven by antigens in infectious disease or autoimmunity[2]

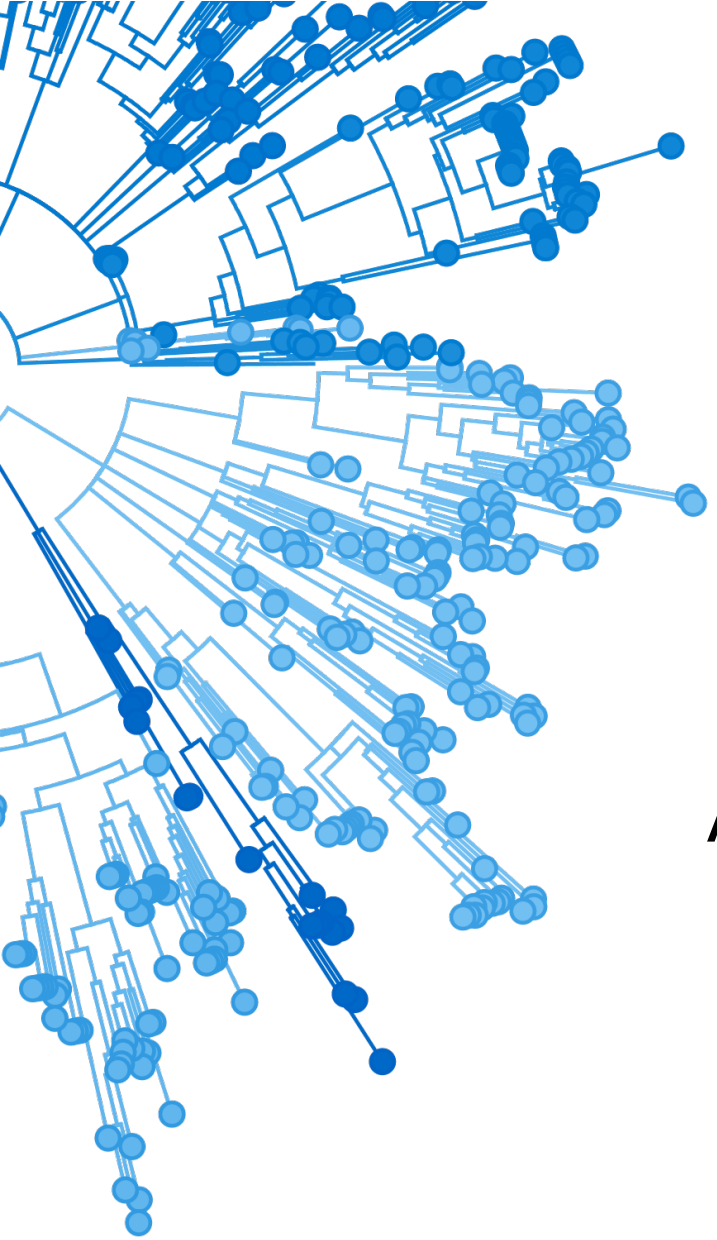
1. Petitprez F, et al. *Nature*. 2020;577:556-560. 2. DeFalco J, et al. *Clin Immunol*. 2018;187:37-45.

Summary of new data and information in this presentation

- Identification and characterization of the target of ATRC-101
  - Analysis of the ribonucleoprotein target *in vitro* and *in situ*
  - Induction of target by chemotherapeutics
- Context for the target of ATRC-101 given known human immune responses to other RNP complexes
- ATRC-101 mechanism of action
  - Cellular changes in tumor microenvironment and the blood
  - Evidence for dual FcR and TLR pathway activation
- Evolving clinical development plans
  - Biomarkers
  - Chemotherapy and T cell directed therapy combinations



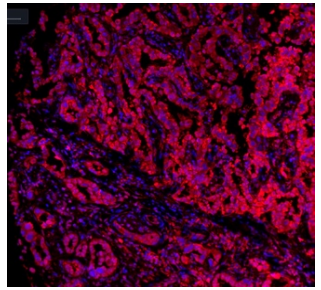
RNP, ribonucleoprotein; TLR, toll-like receptor.



ATRC-101: A Novel Target

ATRC-101 binds a “public” tumor target

ATRC-101* originated from a patient with lung cancer

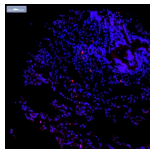
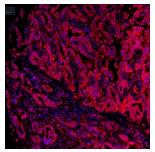
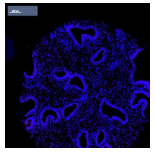
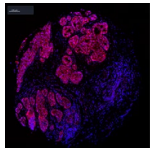
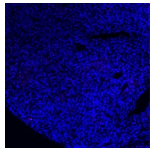
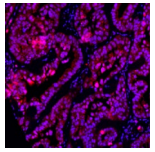
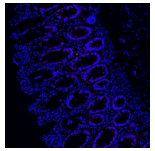
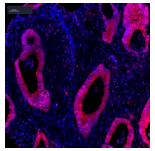
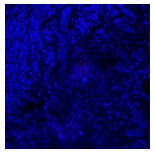
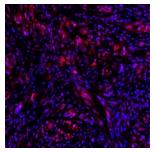


Patient with active anti-tumor response against lung adenocarcinoma

ATRC-101 (binding lung adenocarcinoma tissue from a different patient)

ATRC-101 Fv possesses unusual features unlikely to have been generated in an antibody via traditional, target-based discovery approaches

ATRC-101 reactivity is tumor-specific across multiple cancer types

	ATRC-101			% reactive** samples
NORMAL Adjacent Lung			ADENOCARCINOMA Lung	NSCLC N = 563 65%
BENIGN Breast Fibroadenoma			CARCINOMA Breast Invasive Ductal	Breast N = 208 65%
NORMAL Adjacent Ovary			ADENOCARCINOMA Ovary	Ovarian N = 878 58%
NORMAL Adjacent Colon			ADENOCARCINOMA Colon	Colorectal N = 307 57%
BENIGN Nevus			MELANOMA Cutaneous	Melanoma N = 70 46%

Reactivity has also been observed in several other types, including liver cancer

* “ATRC-101” is an antibody with the engineered Fv present in the fully human clinical candidate. “ATRC-101P” is an antibody with the Fv region present in the antibody as isolated from the patient. In preclinical experiments, “ATRC-101” and “ATRC-101P” refer to an antibody with the indicated Fv that may have either a human or a mouse Fc region depending upon the experiment.

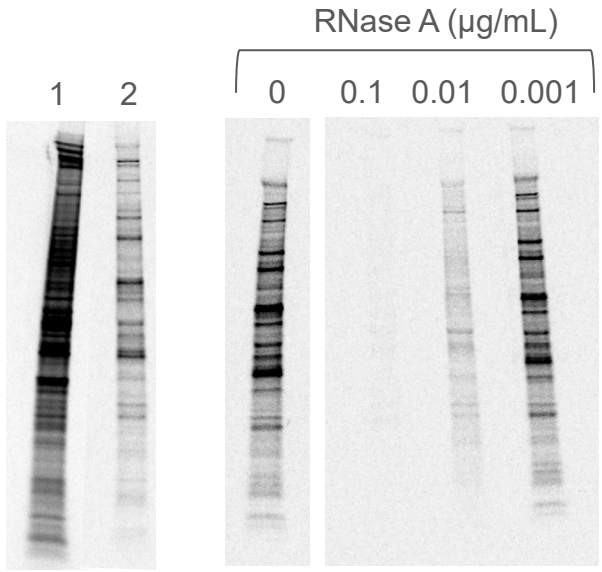
** “Reactive” samples had moderate to high signal overall with ≥40% malignant cells positive (N = total samples). Samples were largely from treatment-naïve patients.

ATRC-101 targets a ribonucleoprotein complex

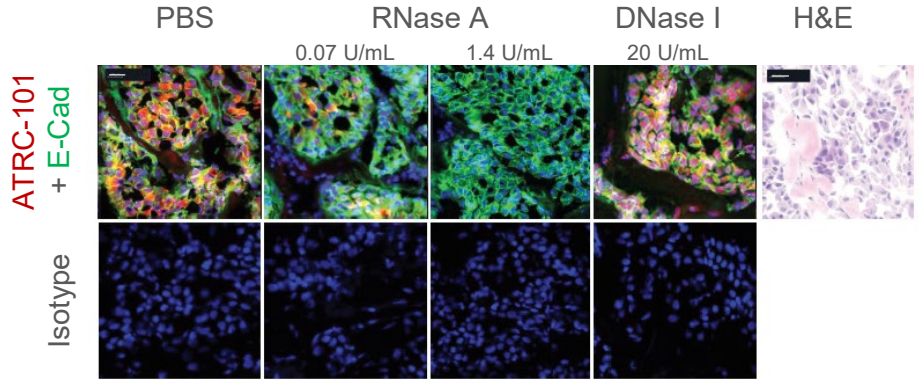
Isolated target of ATRC-101 is composed of multiple RNA-binding proteins and RNA

1 – Whole cell lysate
2 – ATRC-101P immuno-isolate

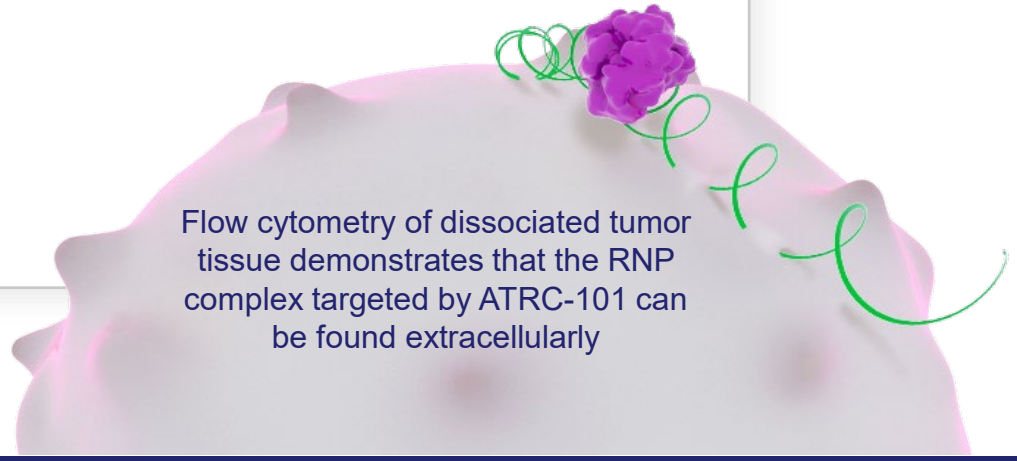
Immuno-isolation from a human cell line under stringent conditions yields a reproducible set of proteins, including many that bind RNA



Pre-treatment with RNase prevents immuno-isolation of this set of proteins



Treatment with RNase prevents recognition of target by ATRC-101 in human tumor tissue

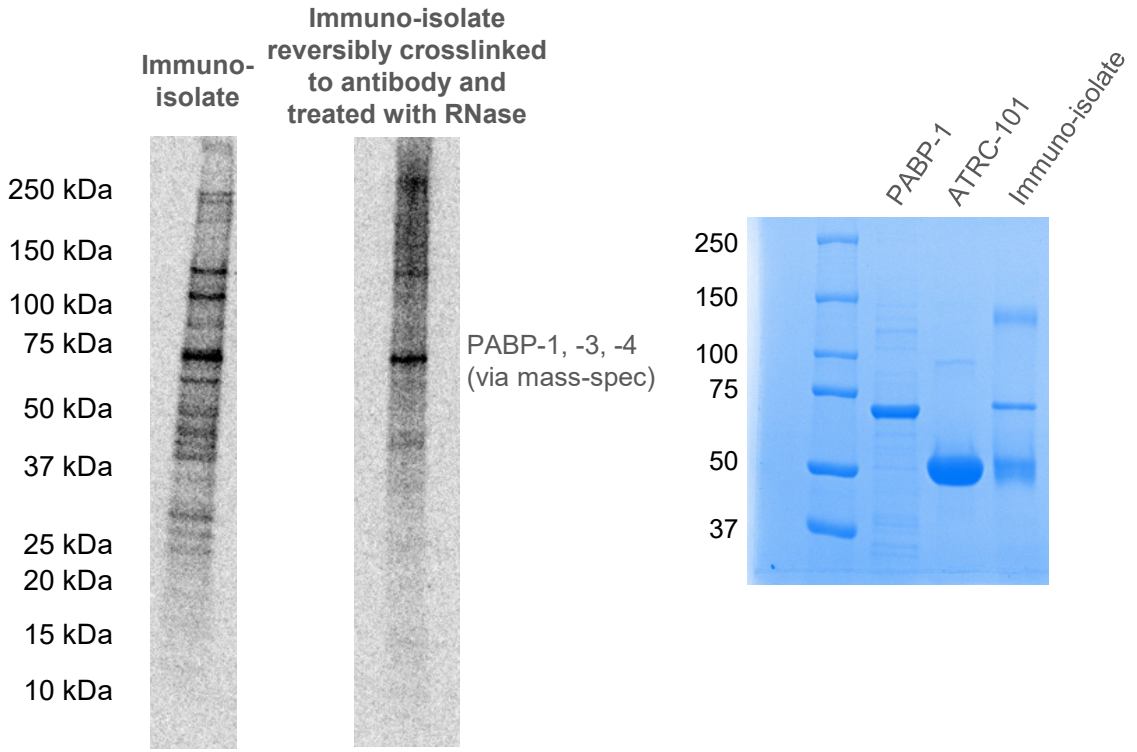


Flow cytometry of dissociated tumor tissue demonstrates that the RNP complex targeted by ATRC-101 can be found extracellularly

E-Cad, E-cadherin; H&E, hematoxylin and eosin; PBS, phosphate-buffered saline.

ATRC-101 binds polyadenylate-binding protein (PABP) family members in the RNP complex

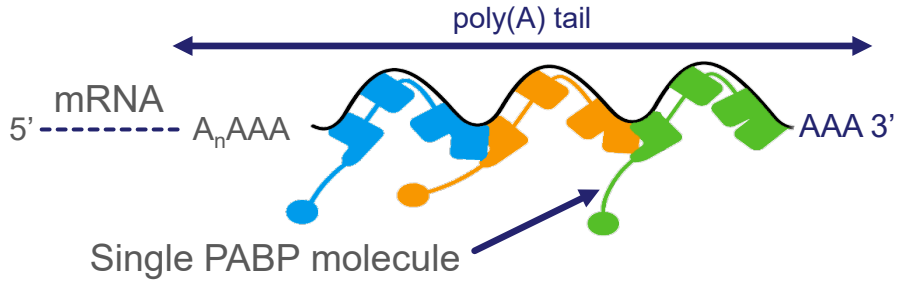
ATRC-101 binds PABP-1 in the target RNP complex



Initial crosslinking and mass-spectrometry experiments with purified recombinant proteins demonstrate antibody-PABP-1 **contact**

PABP-1 bound to mRNA forms an abundant complex

Polyadenylate-binding protein (e.g., PABP-1) bound to mRNA[1]



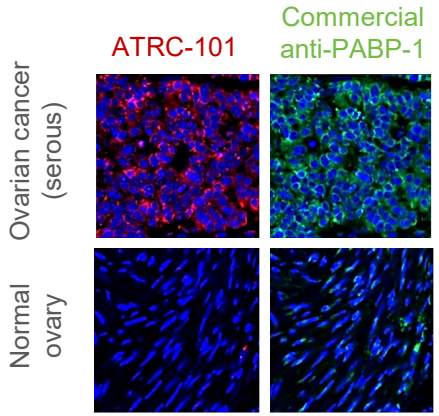
PABP-1 is a highly abundant protein in normal cells that binds to almost all mRNAs and plays a vital role in mRNA biology via facilitating protein–protein interactions[2,3]

We believe that the key property of PABP-1 important for ATRC-101 activity is its ability to bind almost all mRNA species

1. Schafer IB, et al. *Cell*. 2019;177:1619-1631. 2. Goss DJ, et al. *WIREs RNA*. 2013;4:167-179. 3. Gorlach M, et al. *Exp Cell Res*. 1994;211:400-407.

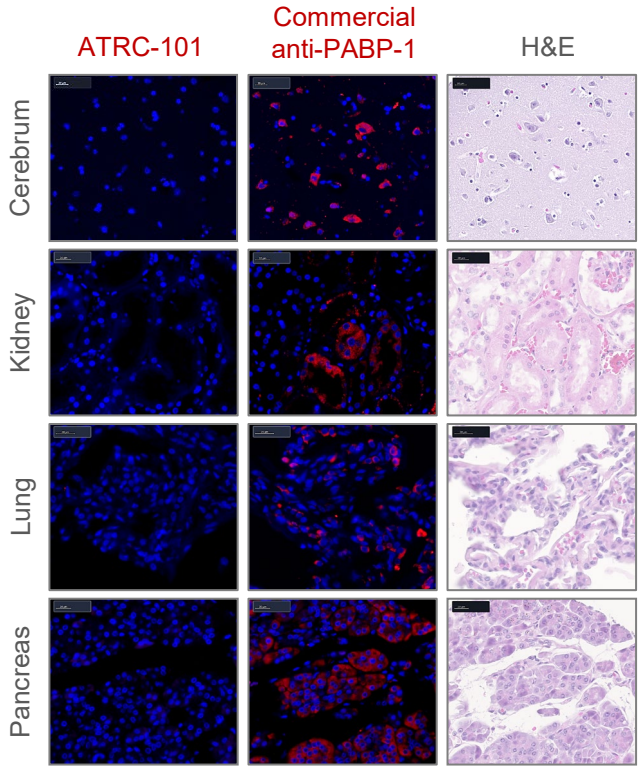
ATRC-101 recognizes a tumor-specific version of an RNP complex containing a differentiated form of PABP-1

ATRC-101 recognizes a tumor-specific target in human tissue samples

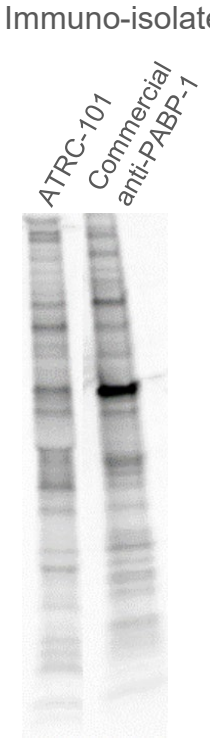


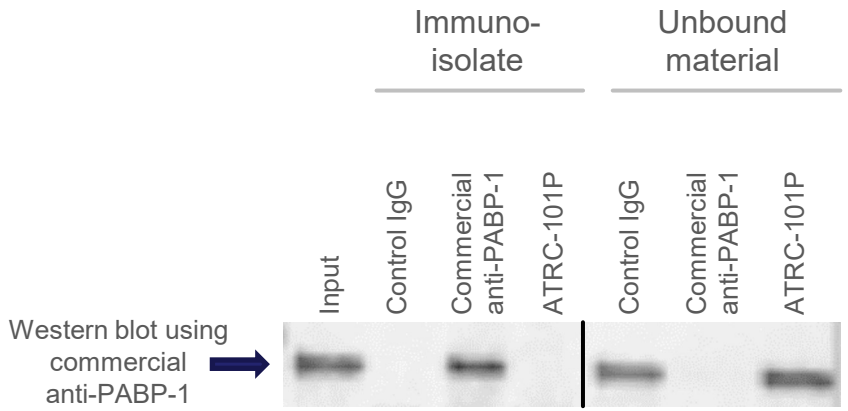
Commercial anti-PABP-1: normal and tumor

ATRC-101: tumor-restricted



ATRC-101 and a commercial antibody against PABP-1 recognize different forms of the protein





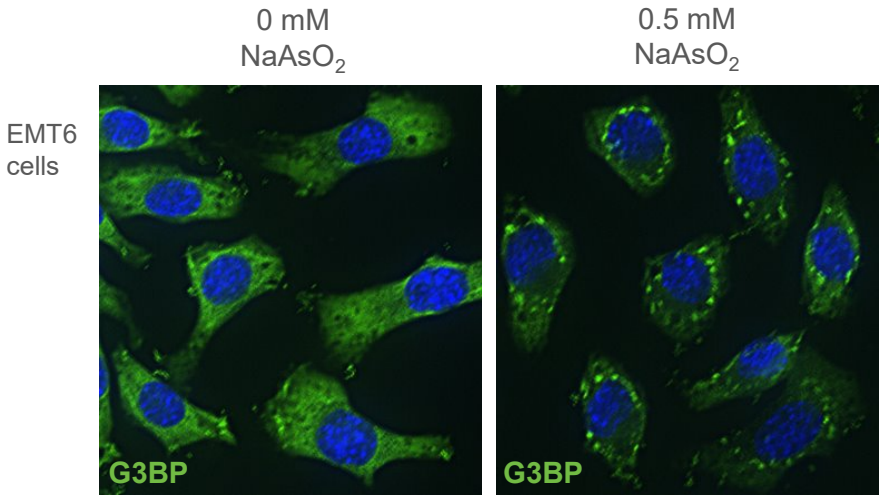
ATRC-101 does not recognize PABP-1 recognized by commercial anti-PABP-1 antibody, and vice versa

Proteins isolated by ATRC-101 appear different from those isolated by a commercial antibody against PABP-1

IgG, immunoglobulin.

Stress induces the target of ATRC-101 in tumor cells

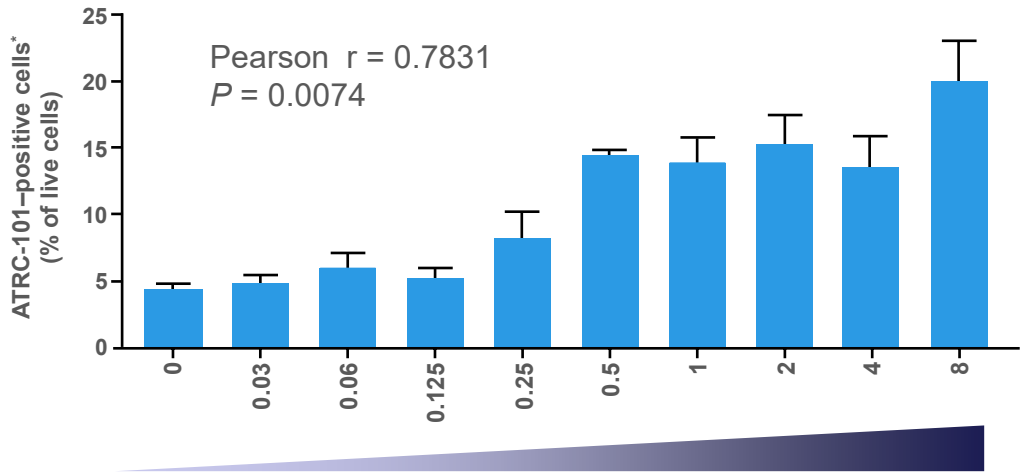
Stress leads to an adaptive response involving mRNA



Stress caused by inducers such as **oxidative poisons**, toxins, elevated temperatures, or KRAS mutations leads to the formation of **mRNA-containing biomolecular condensates**[1]

Forming biomolecular condensates is adaptive for the cell by allowing the cell to focus on translation of particular proteins that help cope with the stress

Stress induces the target of ATRC-101



Stress induction of the target of ATRC-101 together with the biochemical properties and composition of the immuno-isolated target indicate that the target RNP complex has the hallmarks of a biomolecular condensate

* Error bars based on the standard error of technical replicates

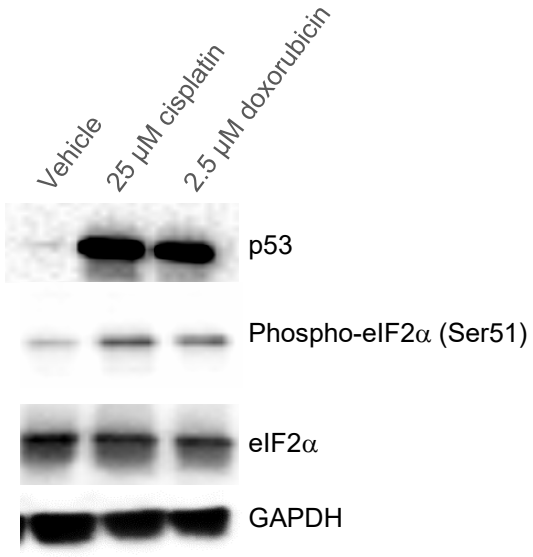
G3BP, Ras GTPase-activating protein-binding protein; $NaAsO_2$, sodium arsenite.

1. Tourriere H, et al. *J Cell Biol*. 2003;160:823-831.

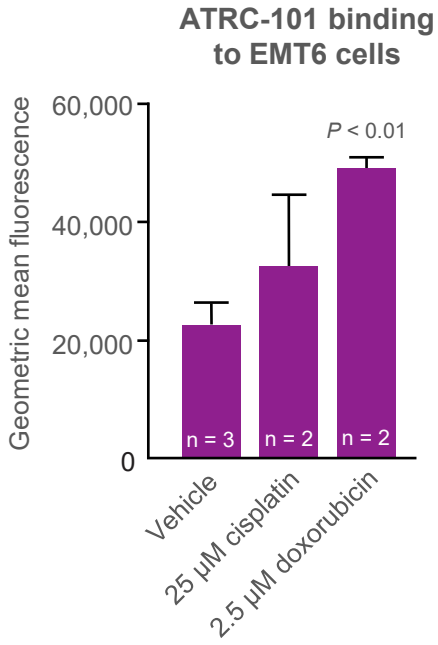
Chemotherapeutics induce target of ATRC-101 *in vitro*

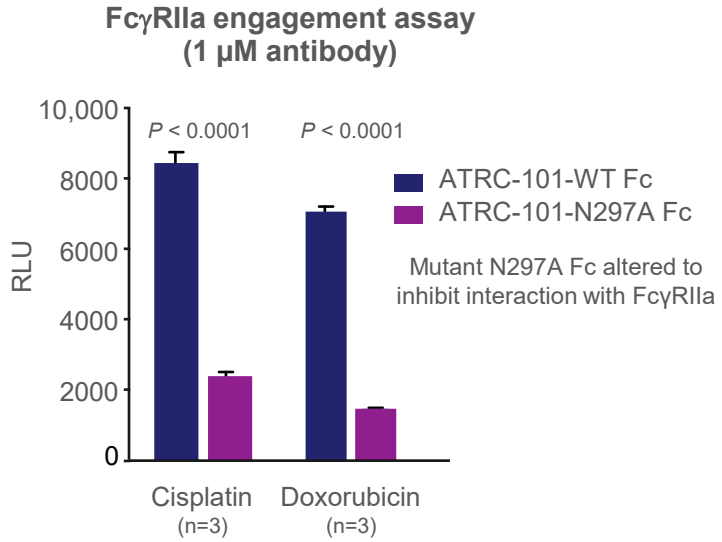
Chemotherapeutics induce molecular stress responses and target of ATRC-101 on cell surface

p53 expression and eIF2α phosphorylation are markers of a stress response



Cisplatin and doxorubicin both induce a stress response





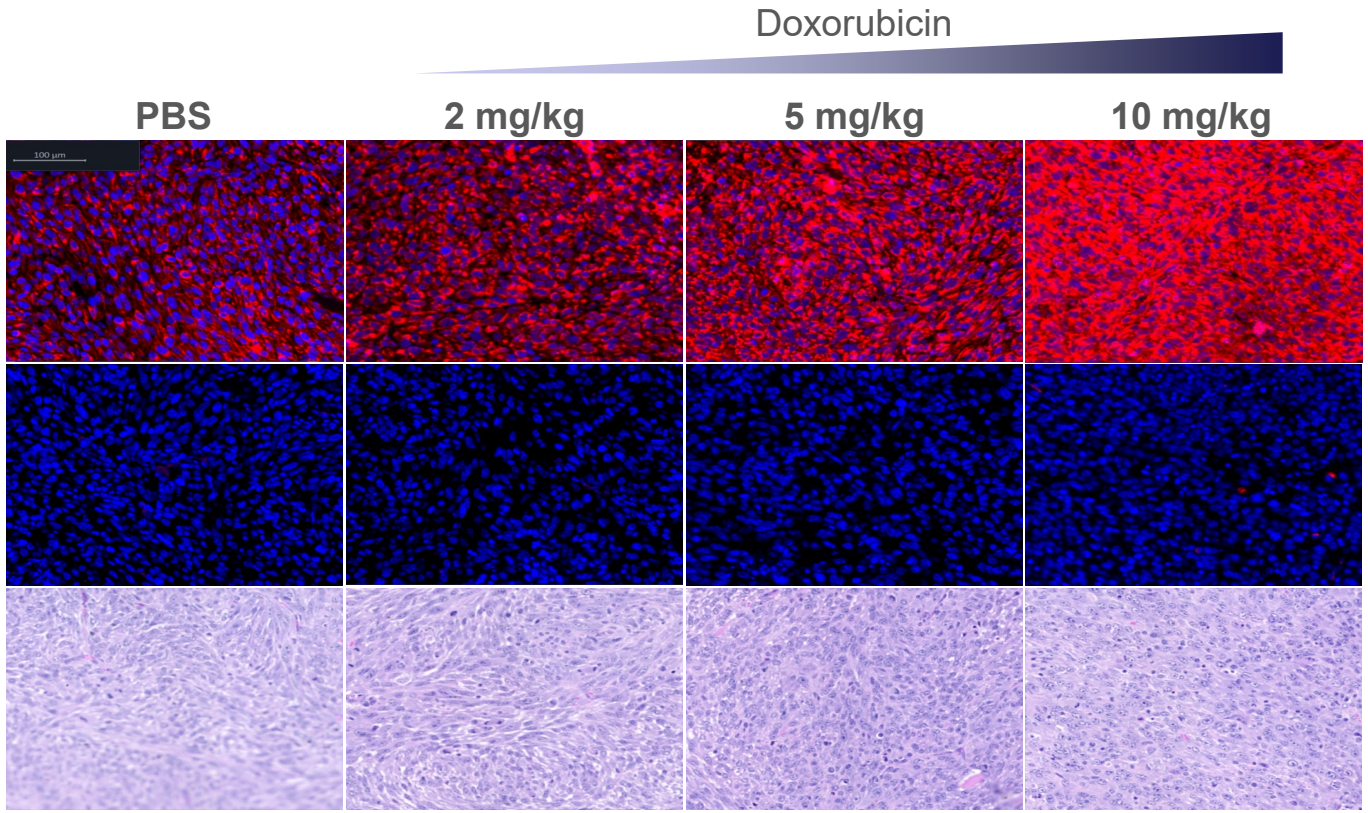
EMT6 cells grown *in vitro* do not normally have target of ATRC-101 present on cell surface

Stress caused by chemotherapy increases the level of the target of ATRC-101 on cells as measured by flow cytometry and an antibody-dependent FcγRIIa engagement assay

eIF2α, eukaryotic translation initiation factor 2A; GAPDH, glyceraldehyde 3-phosphate dehydrogenase; RLU, relative light units; WT, wild-type.

Chemotherapy induces target of ATRC-101 *in vivo*

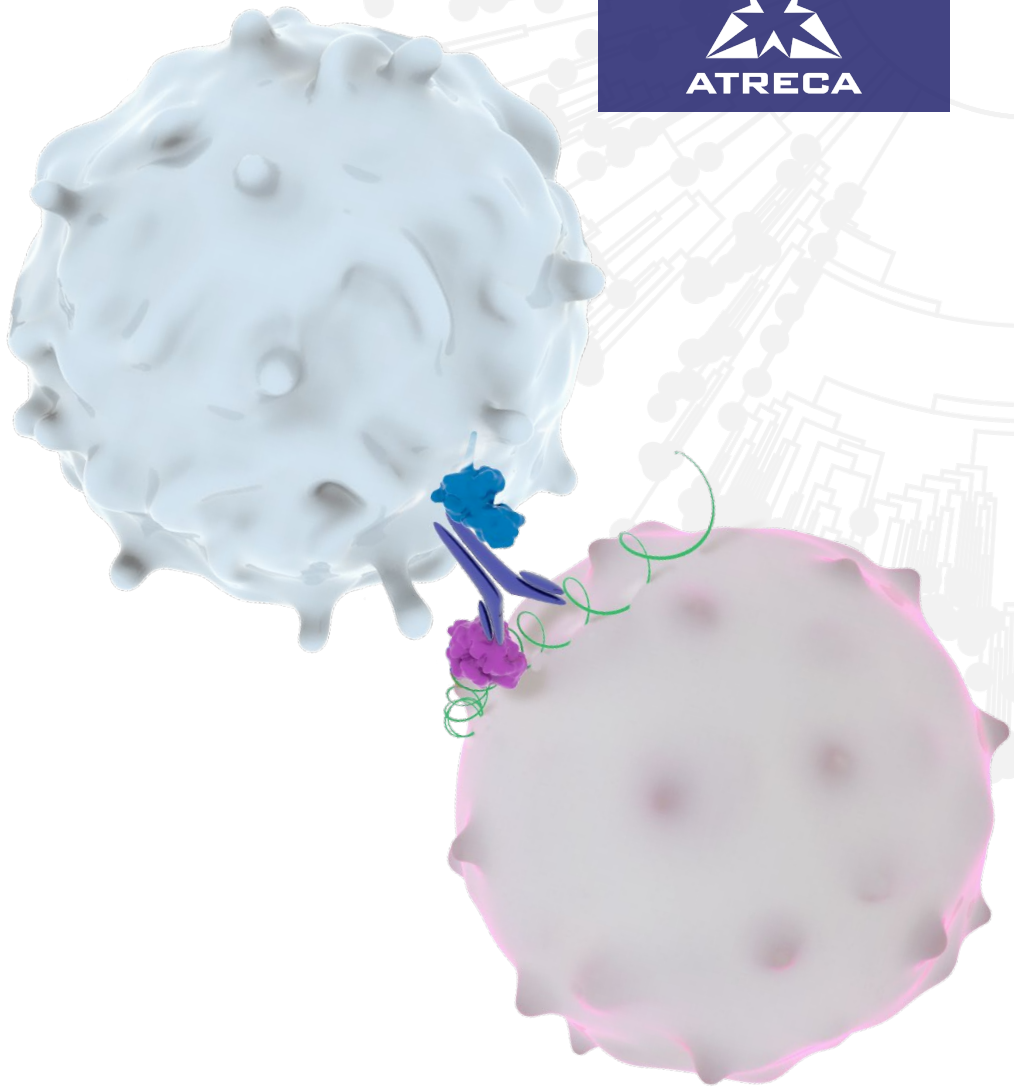
Doxorubicin induces the target of ATRC-101 at dose levels that have limited effect on tumor growth

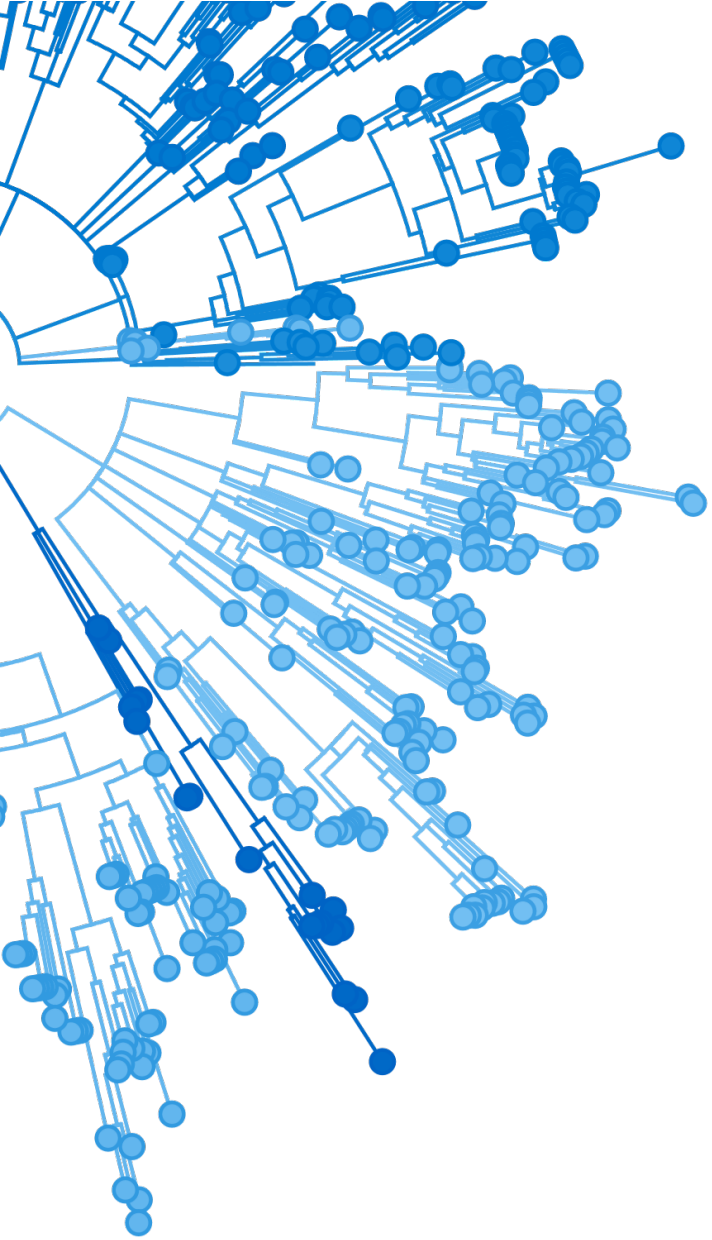


Number EMT6 tumors with increased reactivity	n = 0/10	n = 5/10	n = 7/10	n = 7/7	$P < 0.0001$

Key take-aways

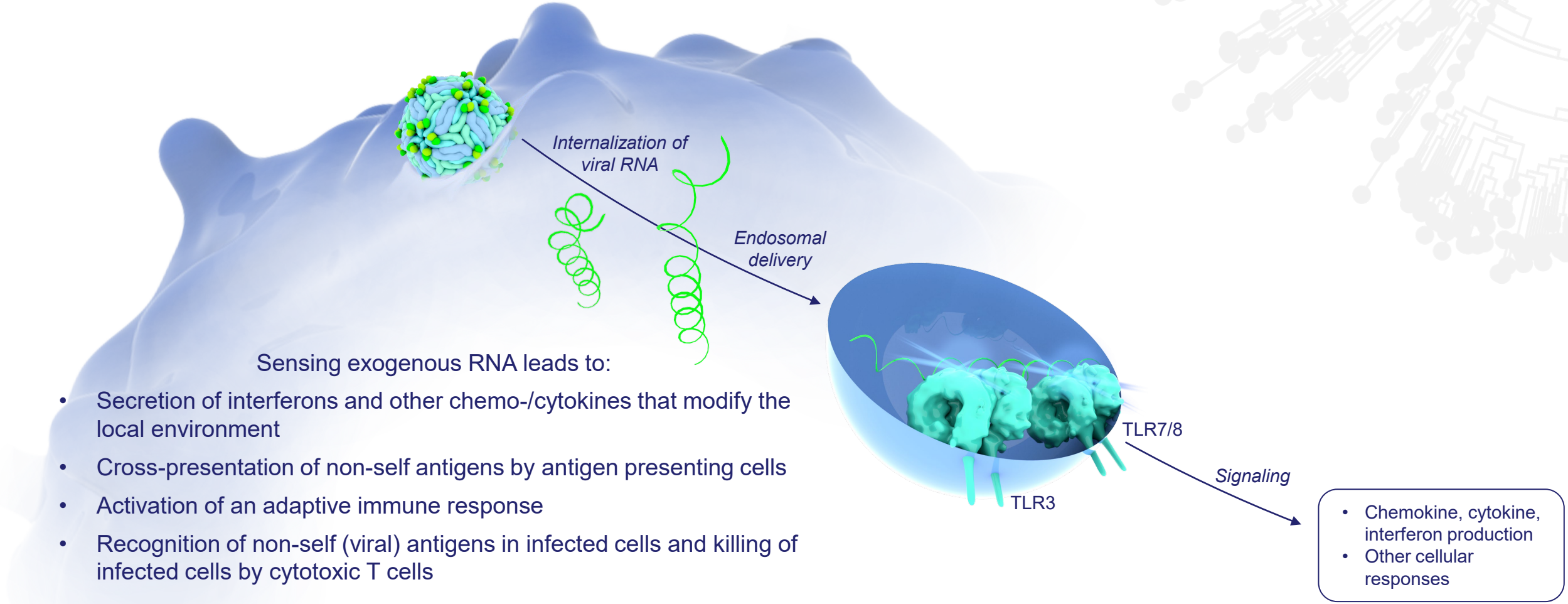
- ATRC-101 recognizes a non-autologous, tumor-specific target present in a majority of samples from multiple solid tumor types
- The target of ATRC-101 is a ribonucleoprotein complex that can be found extracellularly
- Within the RNP target, ATRC-101 binds to polyadenylate-binding protein (PABP) family proteins
  - PABP-1 is expressed at high levels intracellularly across normal tissues
  - The version of PABP-1 in the target is differentiated from other forms of the protein
- The target of ATRC-101 can be induced via a cellular stress response driven by chemotherapeutics





RNP Complexes in Human Immune Responses

Detection of exogenous RNA by myeloid cells is important in immune responses against viral infection



Sensing exogenous RNA leads to:

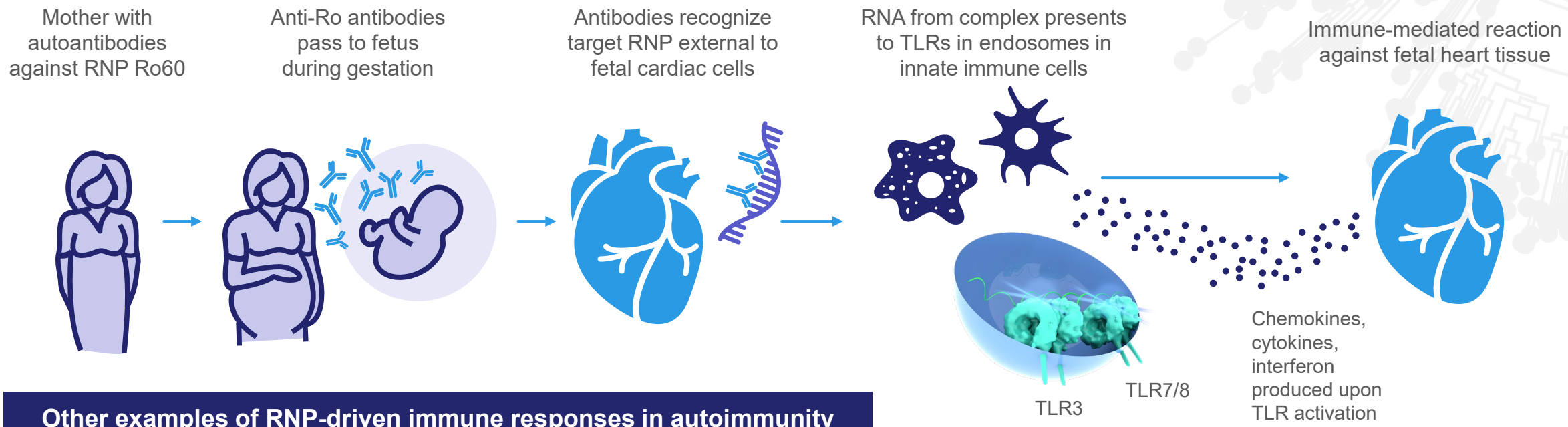
- Secretion of interferons and other chemo-/cytokines that modify the local environment
- Cross-presentation of non-self antigens by antigen presenting cells
- Activation of an adaptive immune response
- Recognition of non-self (viral) antigens in infected cells and killing of infected cells by cytotoxic T cells

TLR, Toll-like receptor.

Boehme KW, et al. *J Virol*. 2004;78:7867-7873.

RNP complexes are antigens that drive tissue-destructive immune responses in autoimmune disease

Neonatal lupus as an example of immune response initiated by an antibody–RNP complex in humans[1]



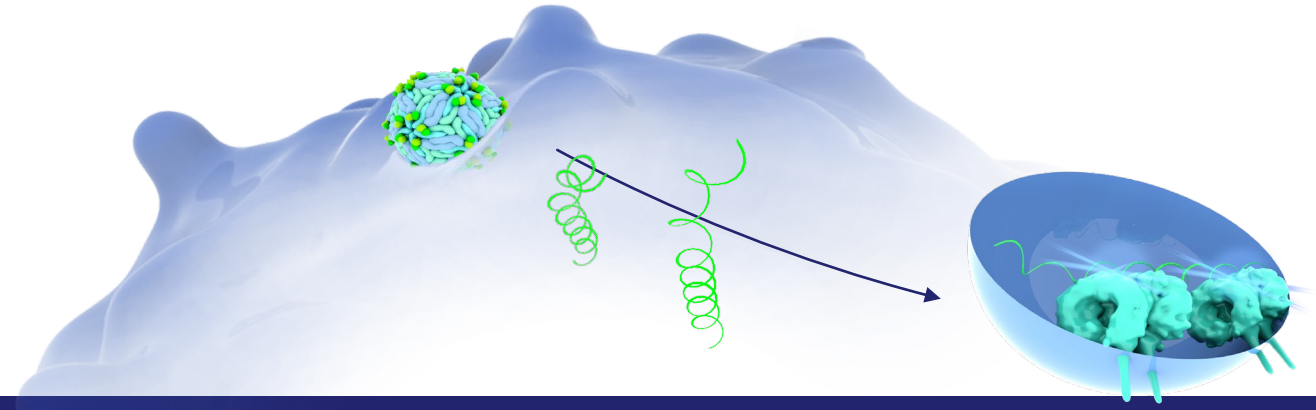
Other examples of RNP-driven immune responses in autoimmunity

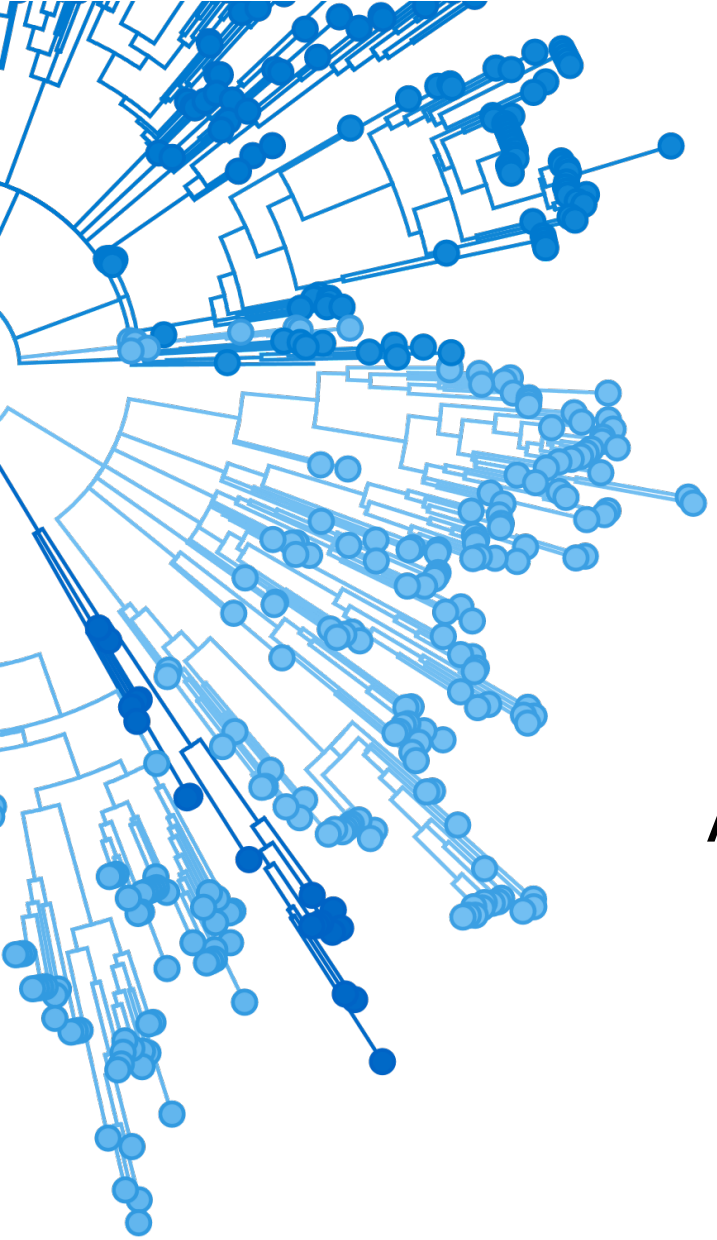
- Sjögren's syndrome[2]
- Mixed connective tissue disease[3]
- Paraneoplastic syndromes[4]

1. Ambrosi A, et al. *Arthritis Res Ther*. 2012;14:208. 2. Routsias JG, et al. *Eur J Clin Invest*. 2010;40:1026-1036.
3. Agris PF, et al. *Immunol Commun*. 1984;13:137-149. 4. Darnell RB, et al. *N Engl J Med*. 2003;349:1543-1554.

Key take-aways

- The immune system has evolved to detect and respond strongly to viral RNA
- Exogenous RNA detected by myeloid cells via endosomal TLRs activates cross-priming and leads to a cytotoxic $CD8^+$ T cell response to non-self antigens
- There are naturally occurring examples of non-viral, cellular RNPs driving immune responses against human tissues
  - In neonatal lupus, maternal antibodies against the Ro60 RNP can induce a TLR-mediated immune response against fetal cardiac tissue
  - Sjögren's syndrome, mixed connective tissue disease, and paraneoplastic diseases are examples of other conditions involving autoimmune responses against RNPs

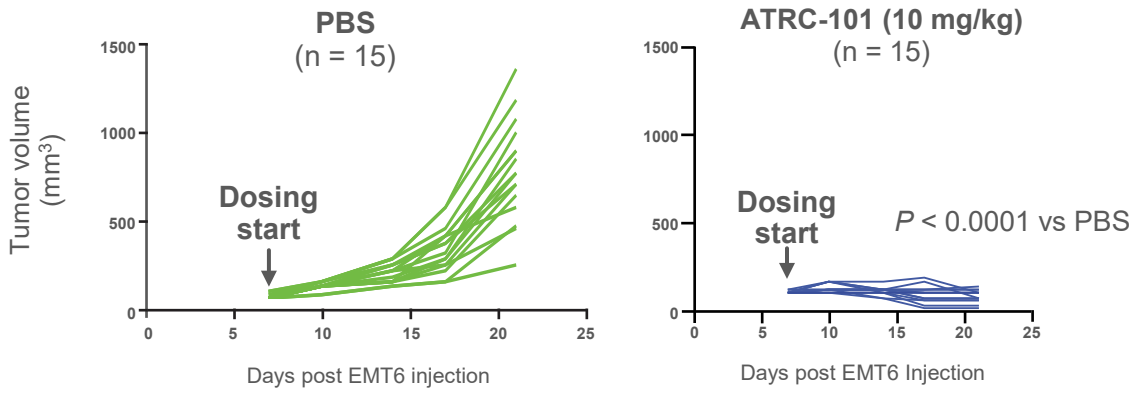


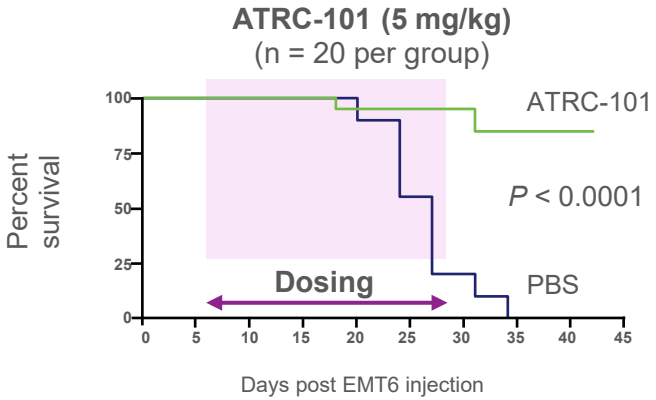


ATRC-101: Activity and Novel Mechanism of Action

ATRC-101 exhibits potent single-agent activity in mouse models of cancer

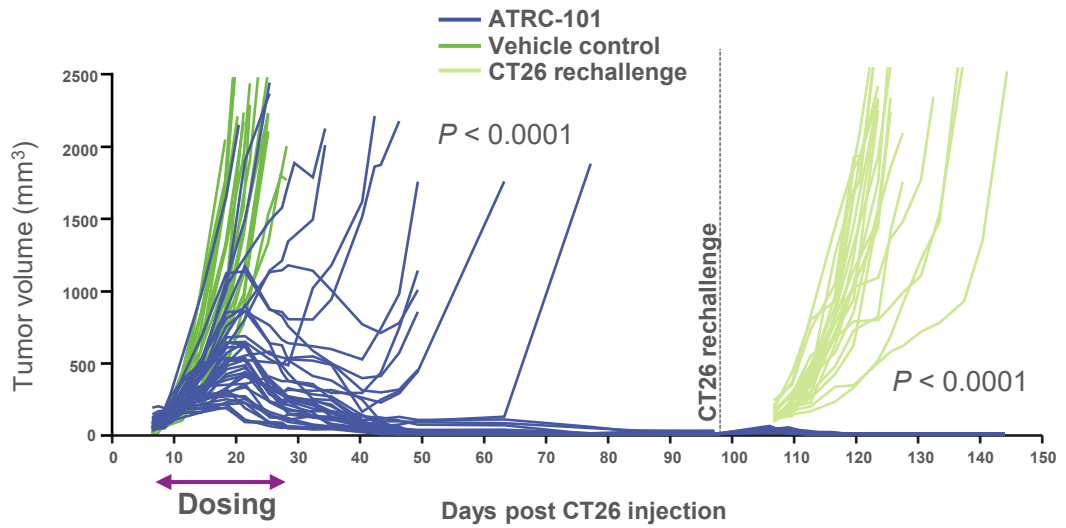
ATRC-101 inhibits tumor growth and prolongs survival in EMT6 syngeneic tumor model





- EMT6 model considered a model of the T-cell–excluded phenotype in human cancer
- In these mice, ATRC-101 inhibited tumor growth and extended survival compared with control treatment

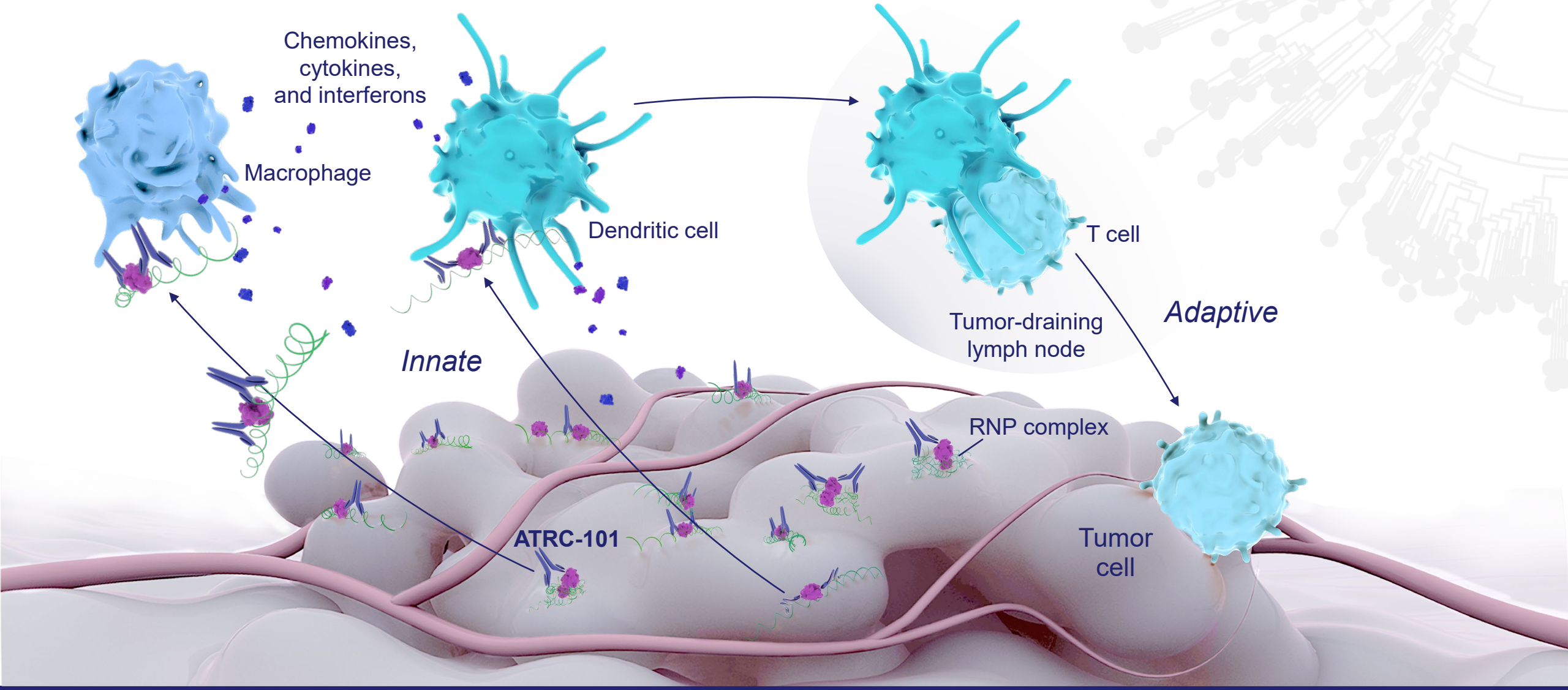
ATRC-101 inhibits tumor growth and leads to immune memory in CT26 syngeneic model



Large tumors can be eradicated in this model by continued dosing with ATRC-101

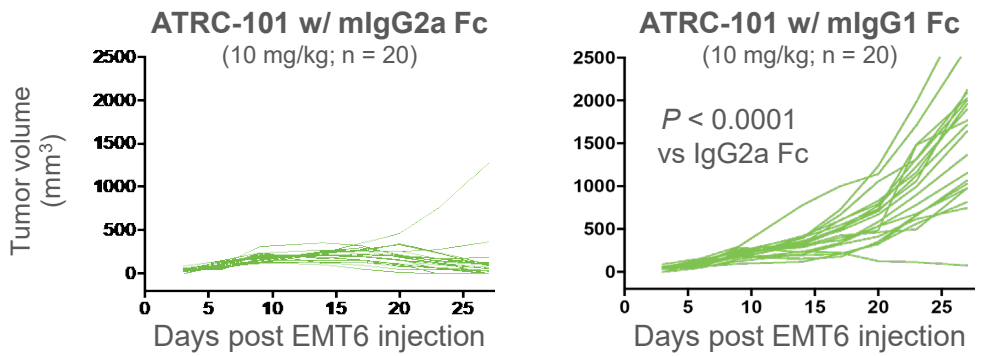
Immune memory prevents re-establishment of tumors after tumor clearance by a second CT26 injection (also observed in EMT6 model)

ATRC-101 engages an RNP-driver antigen that elicits both innate and adaptive immune responses

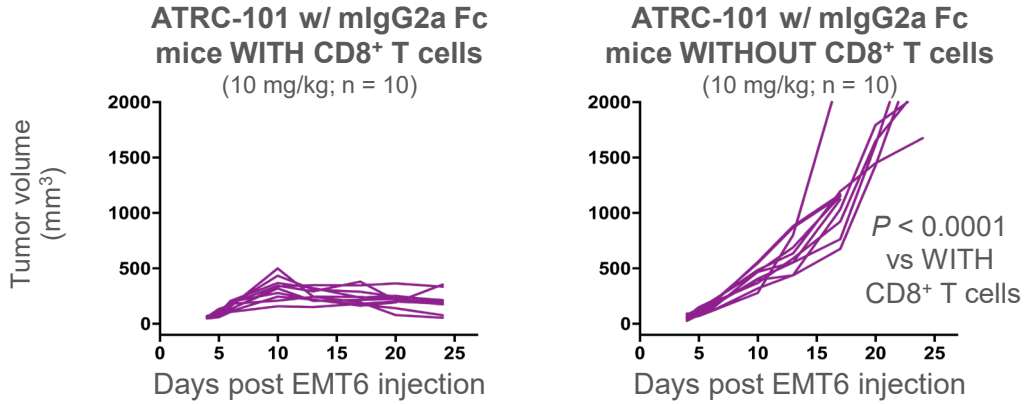


ATRC-101 activity requires both innate and adaptive immune responses

Requirement for innate immune system



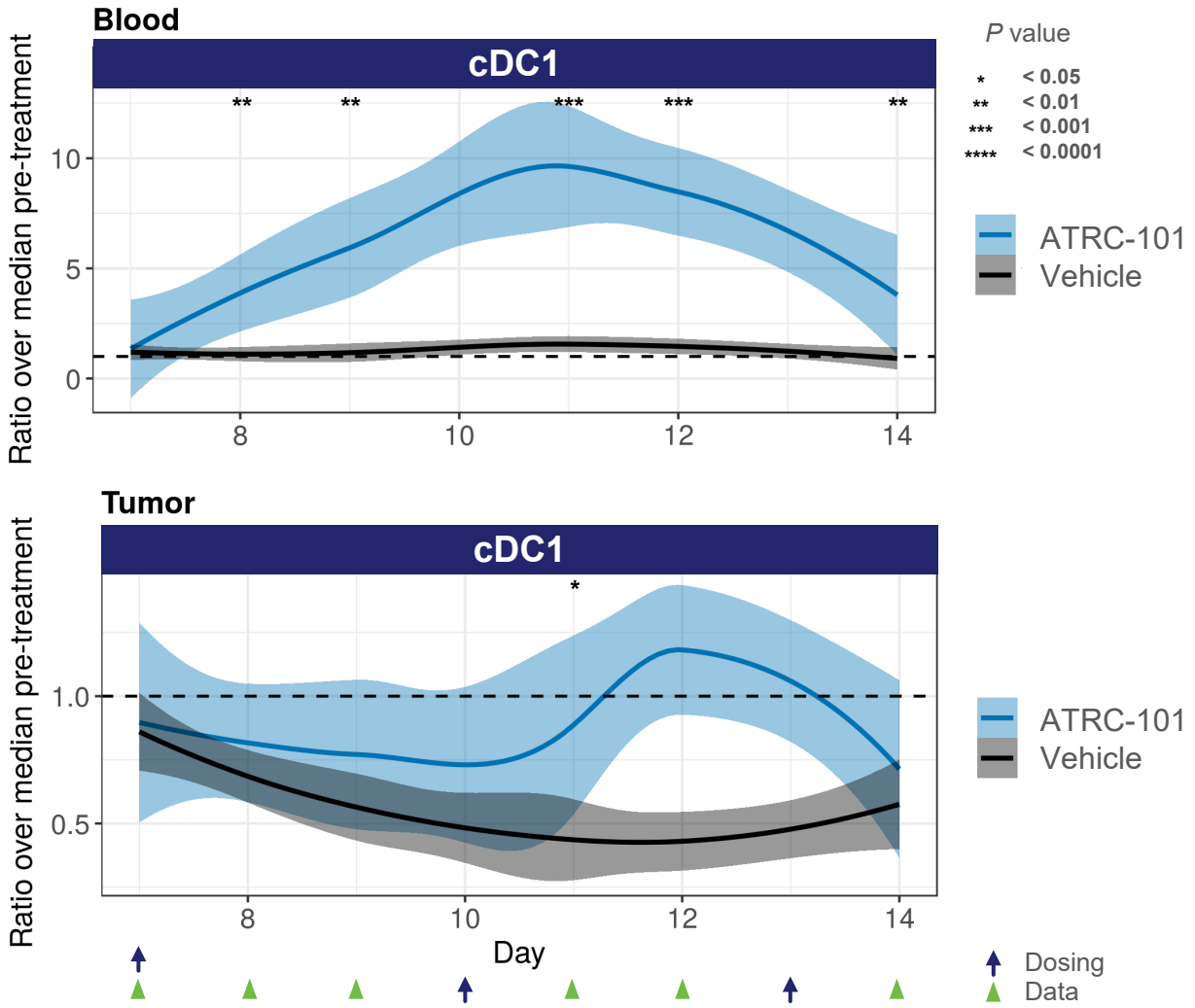
Requirement for CD8+ T cells in adaptive immune response



- NK cells or complement-dependent cytotoxicity alone also cannot drive activity, as activity is lost in *nu / nu* mice
- Overall, these and other data indicate that activity *in vivo* requires:
  - ATRC-101 Fc to bind to FcRs on innate immune (likely myeloid) cells
  - Induction of cytotoxic CD8⁺ T cell response

FcR, Fc receptor; NK, natural killer.

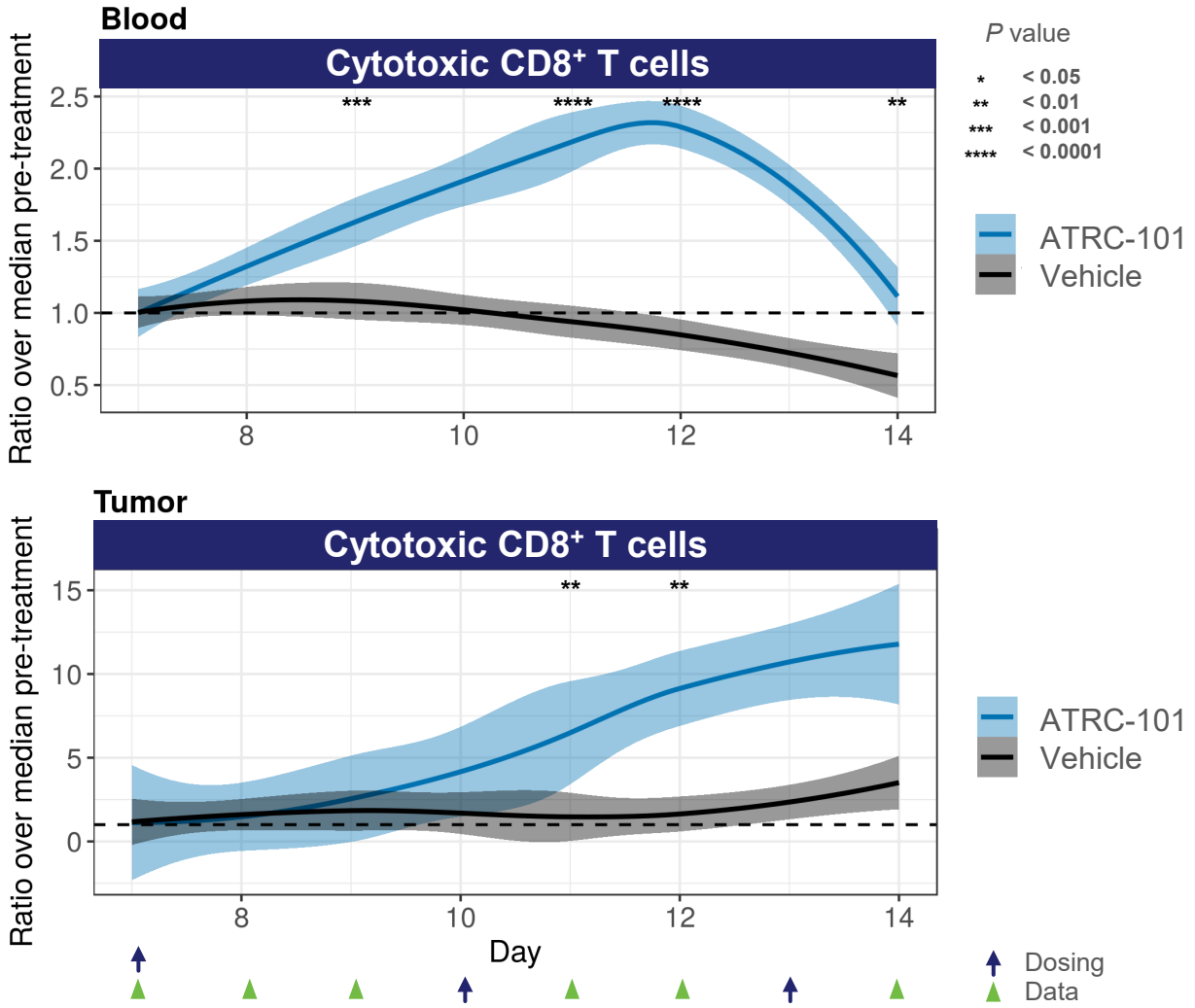
ATRC-101 changes the immune cell profile of the tumor microenvironment and blood in animal models



- cDC1 dendritic cells: Myeloid cell type that transports antigens to lymph nodes and cross-presents those antigens in MHC class I, leading to activation of cytotoxic T cells
- Effects of ATRC-101 on number of cDC1s in blood are almost immediate (within 24 hours), consistent with their being activated in tumor and trafficking to lymph nodes

cDC1, conventional dendritic cell subtype 1.

ATRC-101 changes the immune cell profile of the tumor microenvironment and blood in animal models



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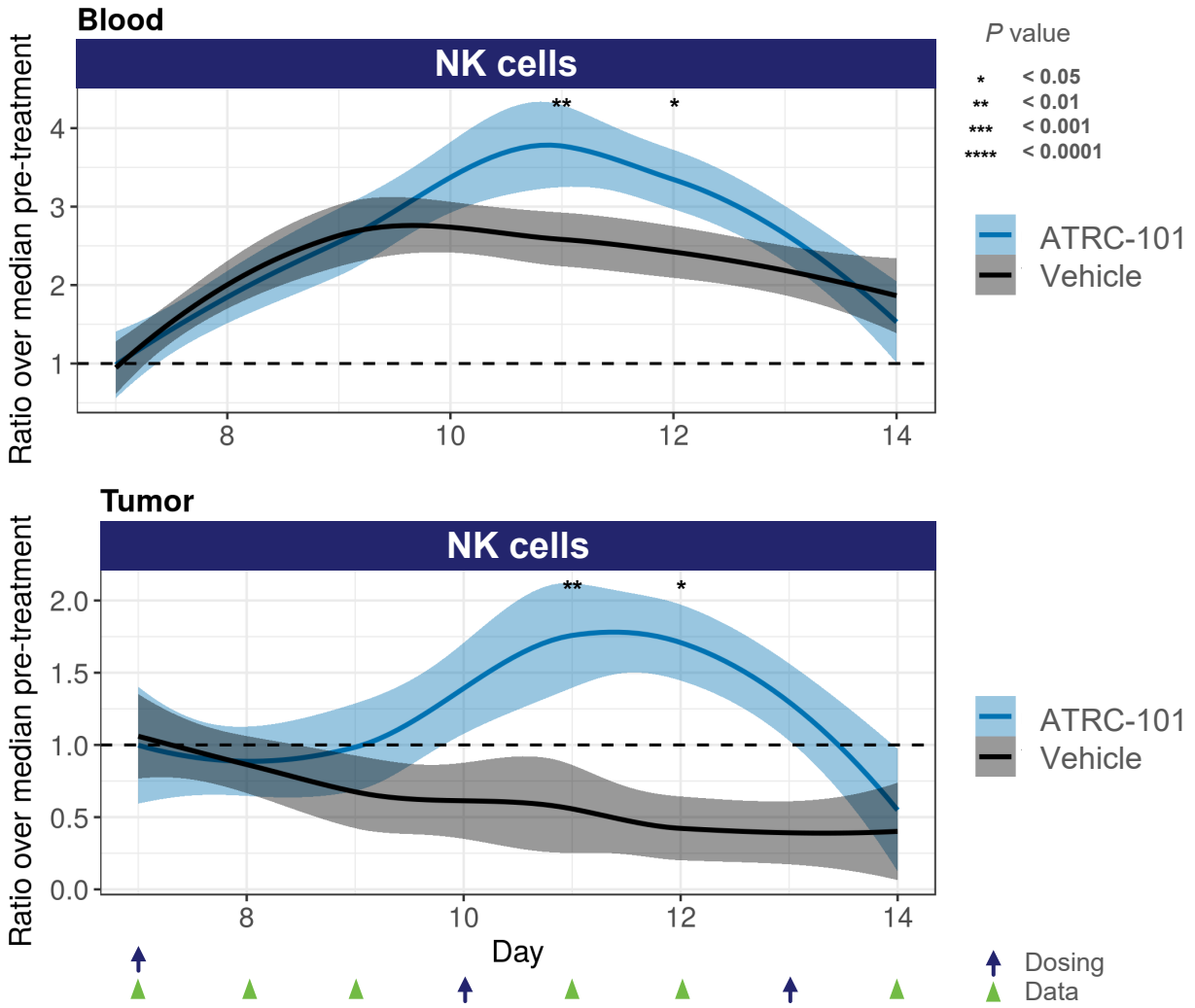
- Cytotoxic CD8⁺ T cells also start increasing in blood with only a slight delay relative to cDC1 cells
- CD8⁺ T cells then start appearing in the tumor in significant numbers after a delay, consistent with their activation in and trafficking from lymph nodes

ATRC-101 changes the immune cell profile of the tumor microenvironment and blood in animal models



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- Although NK cell numbers rise in the blood in both groups, ATRC-101 treatment causes a larger increase and causes NK cells to traffic into tumor at roughly the same time as the cytotoxic $CD8^+$ T cells

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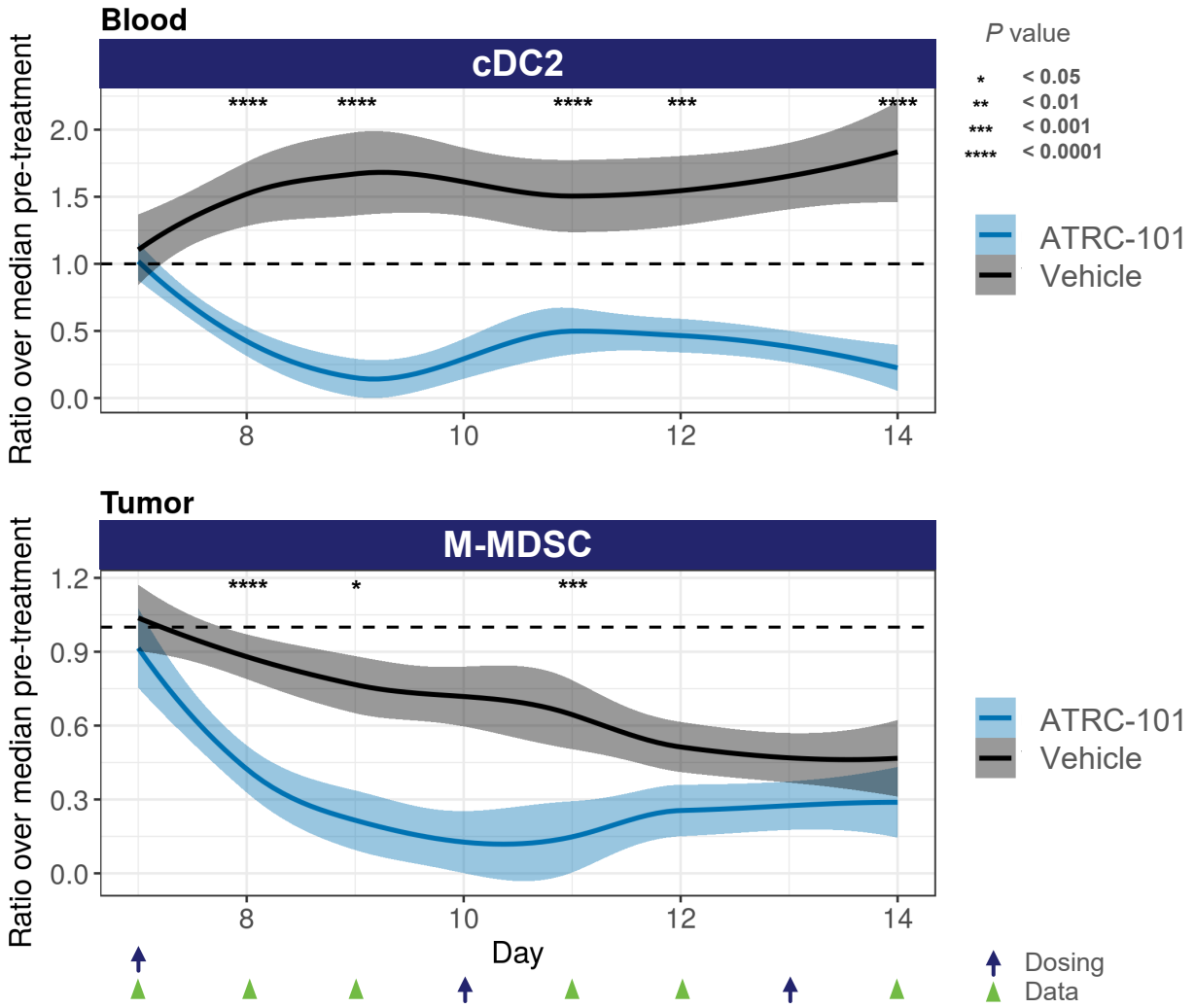

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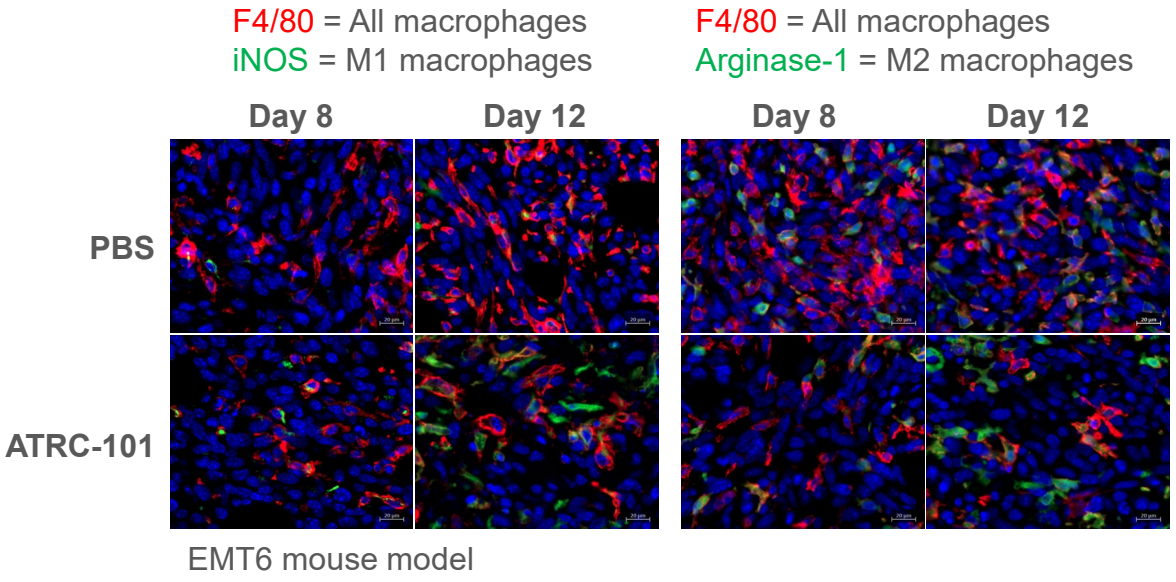
- Although NK cell numbers rise in the blood in both groups, ATRC-101 treatment causes a larger increase and causes NK cells to traffic into tumor at roughly the same time as the cytotoxic $CD8^+$ T cells
- Contrasting with cDC1 cells, numbers of cDC2 dendritic cells in the blood decrease almost immediately with ATRC-101 dosing
- Within the tumor, numbers of immune-suppressive M-MDSC cells also drop almost immediately with ATRC-101 dosing

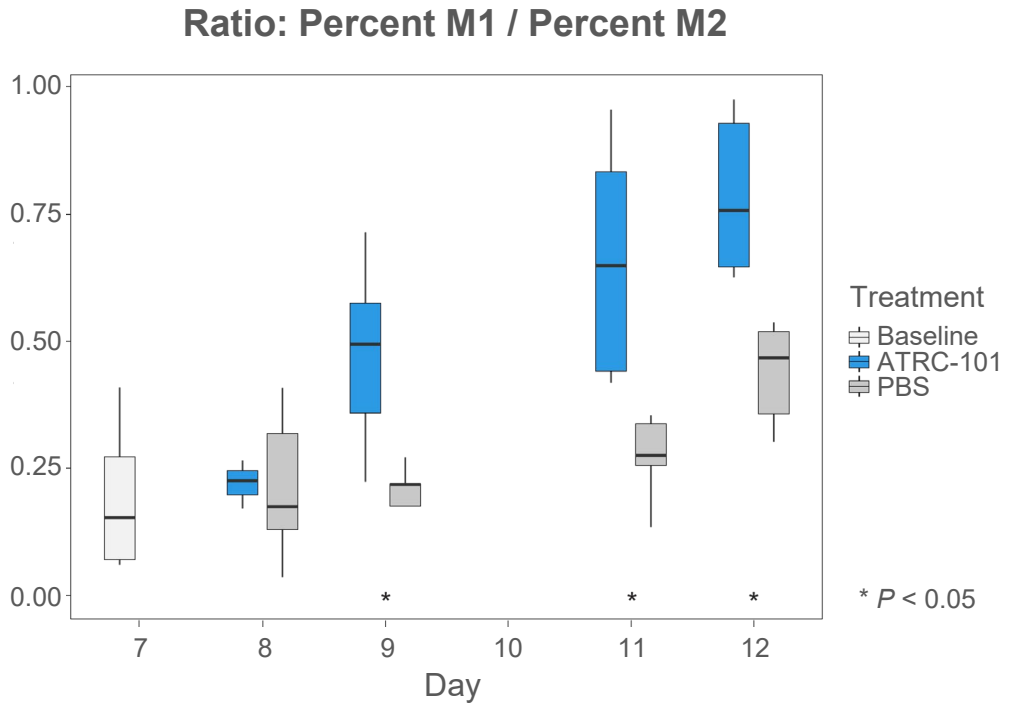
cDC2, conventional dendritic cell subtype 2; M-MDSC, monocytic myeloid-derived suppressor cell.

ATRC-101 leads to a shift toward M1 macrophage profile

ATRC-101 treatment shifts the macrophages in the tumor microenvironment towards an anti-tumorigenic phenotype



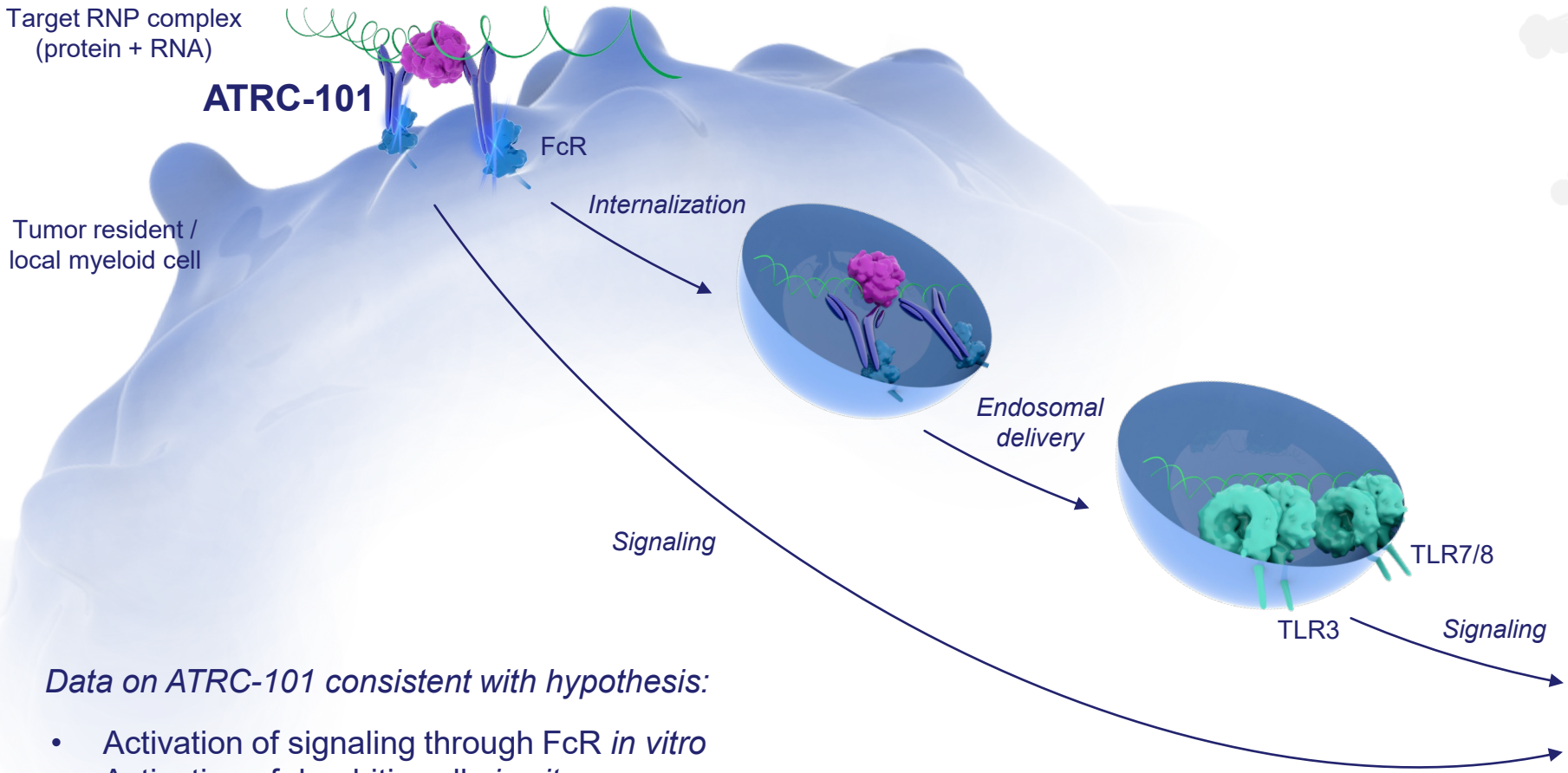
EMT6 mouse model



ATRC-101 treatment induces polarization toward the M1 and away from the M2 phenotype

F4/80, macrophage marker (also known as Ly71); iNOS, inducible nitric oxide synthase.

Hypothesis: Dual FcR and TLR activation delivers activity



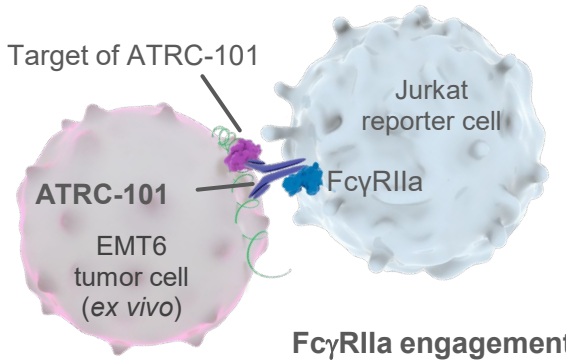
- Chemokine, cytokine, interferon production
- Other cellular responses

Data on ATRC-101 consistent with hypothesis:

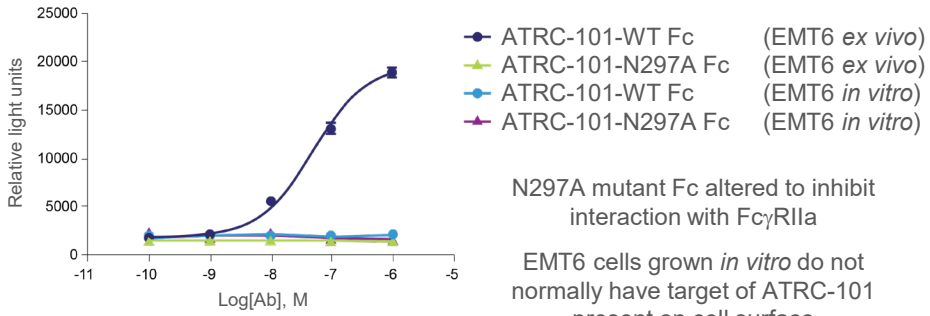
- Activation of signaling through FcR *in vitro*
- Activation of dendritic cells *in vitro*
- Secretion of TLR-induced chemo-/cytokines *in vivo*
- Expression of interferon-stimulated genes *in vivo*

ATRC-101 activates DCs and signaling via FcγRIIa

ATRC-101 can activate signaling by engaging FcγRIIa on the cell surface



FcγRIIa engagement assay

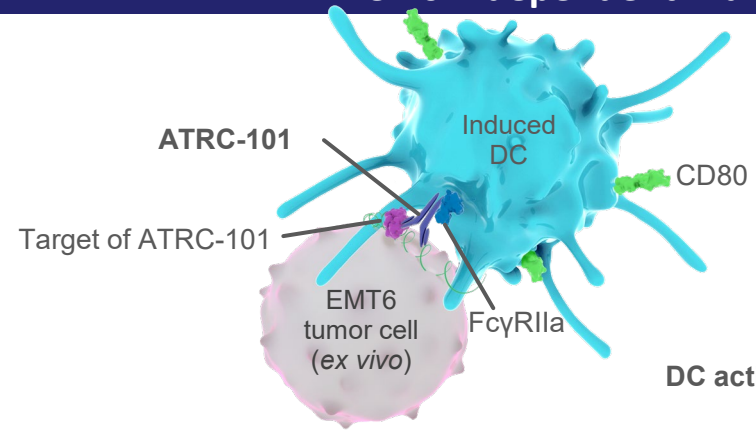


N297A mutant Fc altered to inhibit interaction with FcγRIIa

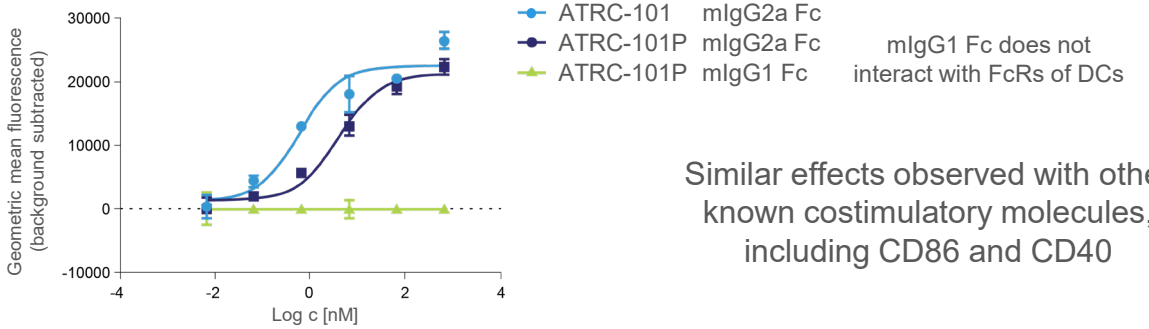
EMT6 cells grown *in vitro* do not normally have target of ATRC-101 present on cell surface

No induction if interaction with FcγRIIa is inhibited

The target of ATRC-101 activates DCs *in vitro* in an ATRC-101–dependent manner



DC activation assay



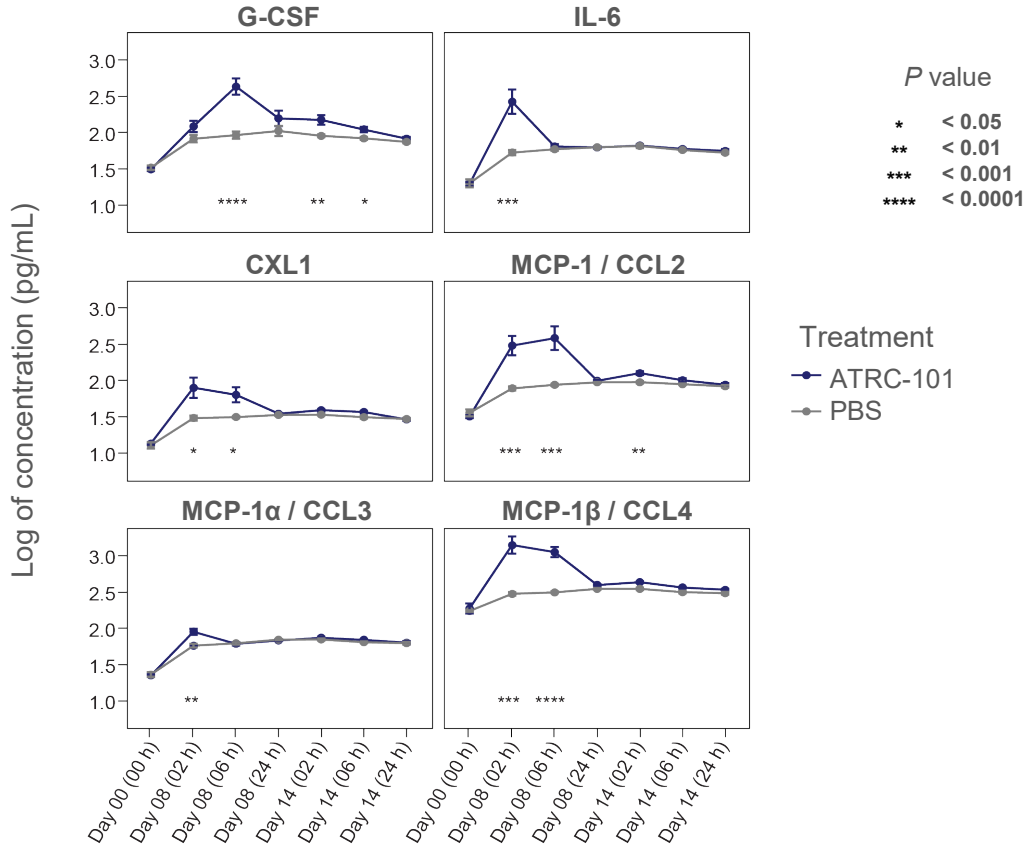
mIgG1 Fc does not interact with FcRs of DCs

Similar effects observed with other known costimulatory molecules, including CD86 and CD40

Binding of ATRC-101 to its target activates DCs in an Fc-dependent manner as assessed by canonical activation markers on the cell surface

Myeloid chemo-/cytokine induction upon dosing consistent with TLR activation in an animal model

ATRC-101P causes a transient increase in myeloid chemo-/cytokines within hours of administration



These chemo-/cytokines are hallmarks of TLR activation

Sharma S, et al.[1]
A TLR9 agonist (CpG) injected into a colon cancer mouse model increased the following chemokines and cytokines in the serum out of 15 assayed:

IL-6
CXCL1
MCP-1 / CCL2
MCP-1α / CCL3
CCL5

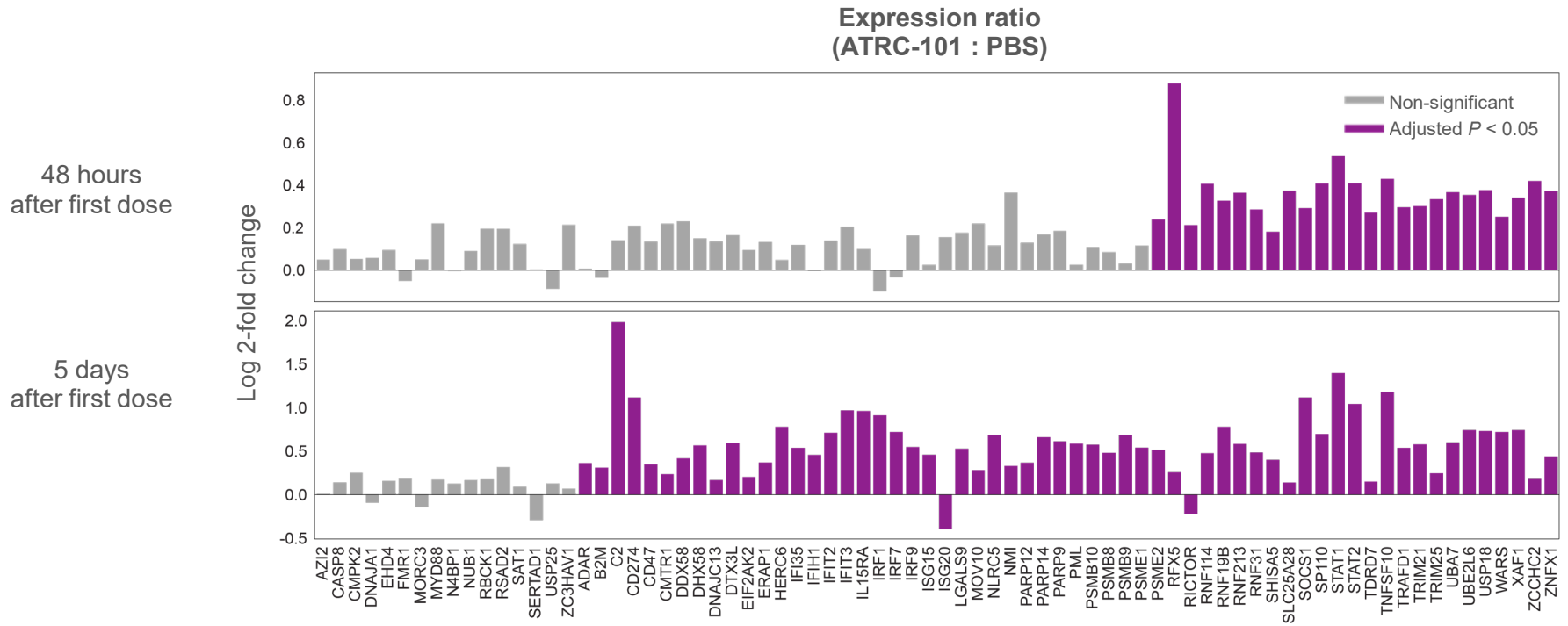
The chemokines and cytokines induced by ATRC-101 in EMT6 mice are very similar to those induced by a TLR9 agonist injected intratumorally in the CT26 model

G-CSF, granulocyte colony stimulating factor; IL, interleukin; MCP, monocyte chemoattractant protein.

1. Sharma S, et al. *Neoplasia*. 2004;6:523-528.

ATRC-101 dosing leads to nucleic acid sensor activation *in vivo* as assessed by interferon-stimulated gene expression

ATRC-101 induces significant increases in interferon-stimulated gene (ISG) expression in tumors



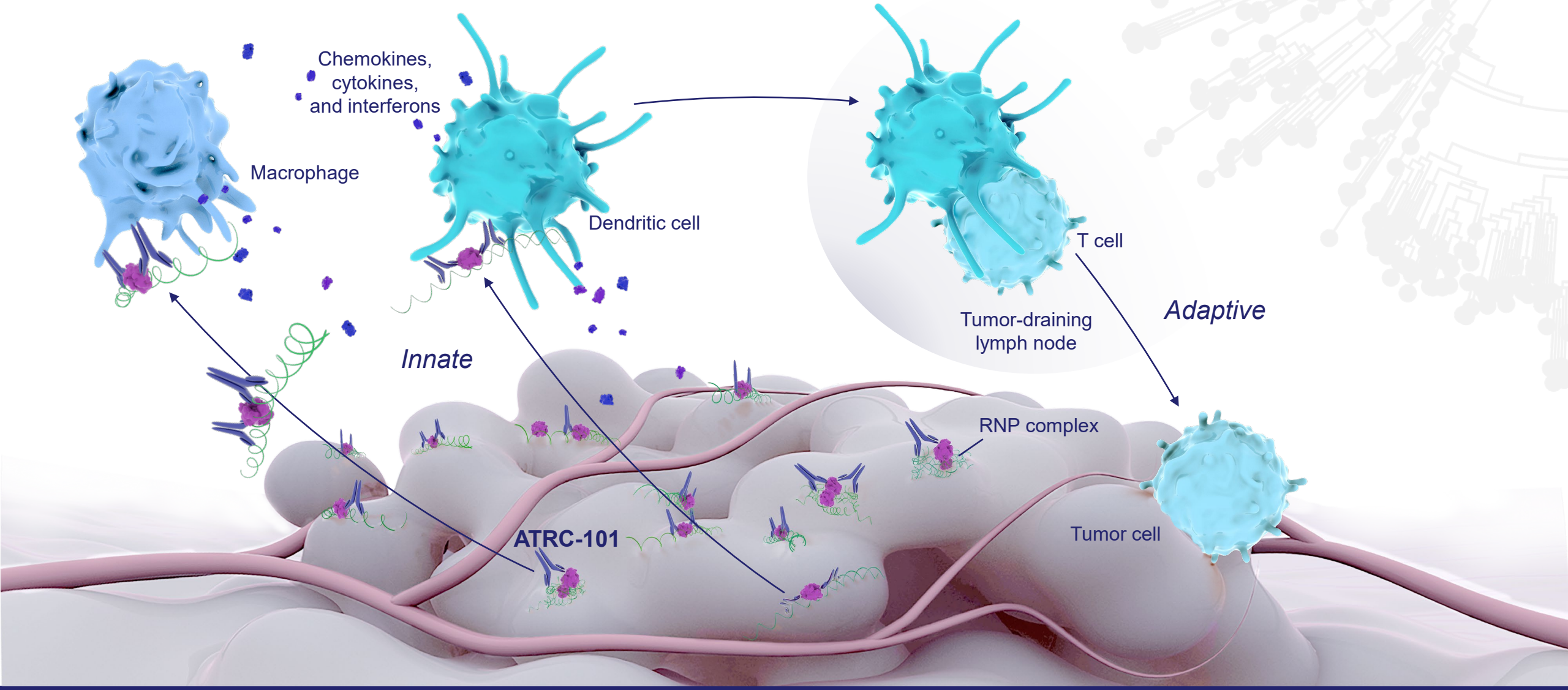
This core set of ISGs provides a readout of interferon-driven signaling in cells[1]

Interferon secretion by cells is a hallmark of the activation of nucleic acid sensors including TLRs

Given the other data from the literature and as generated, this signal is consistent with ATRC-101 facilitating detection of its target RNP complex via TLRs in myeloid cells

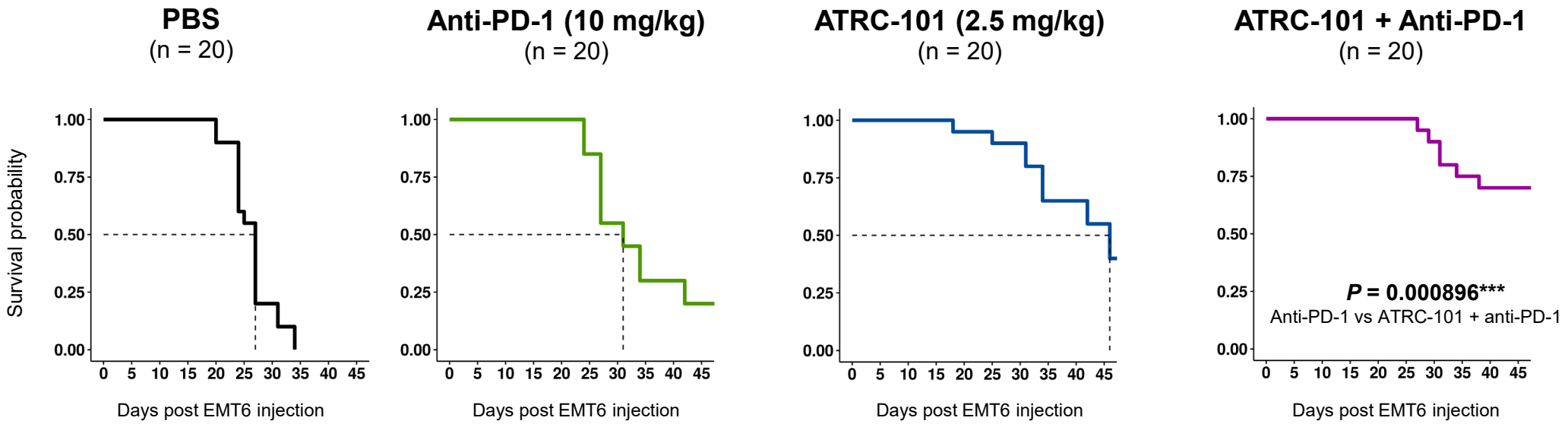
1. Shaw AE, et al. *PLoS Biol*. 2017;15:e2004086.

ATRC-101 engages an RNP-driver antigen that elicits both innate and adaptive immune responses



ATRC-101 facilitated activity of checkpoint inhibitors and other T cell focused therapeutics in an animal model

ATRC-101 facilitates anti-PD-1 activity in a model of the T cell excluded phenotype



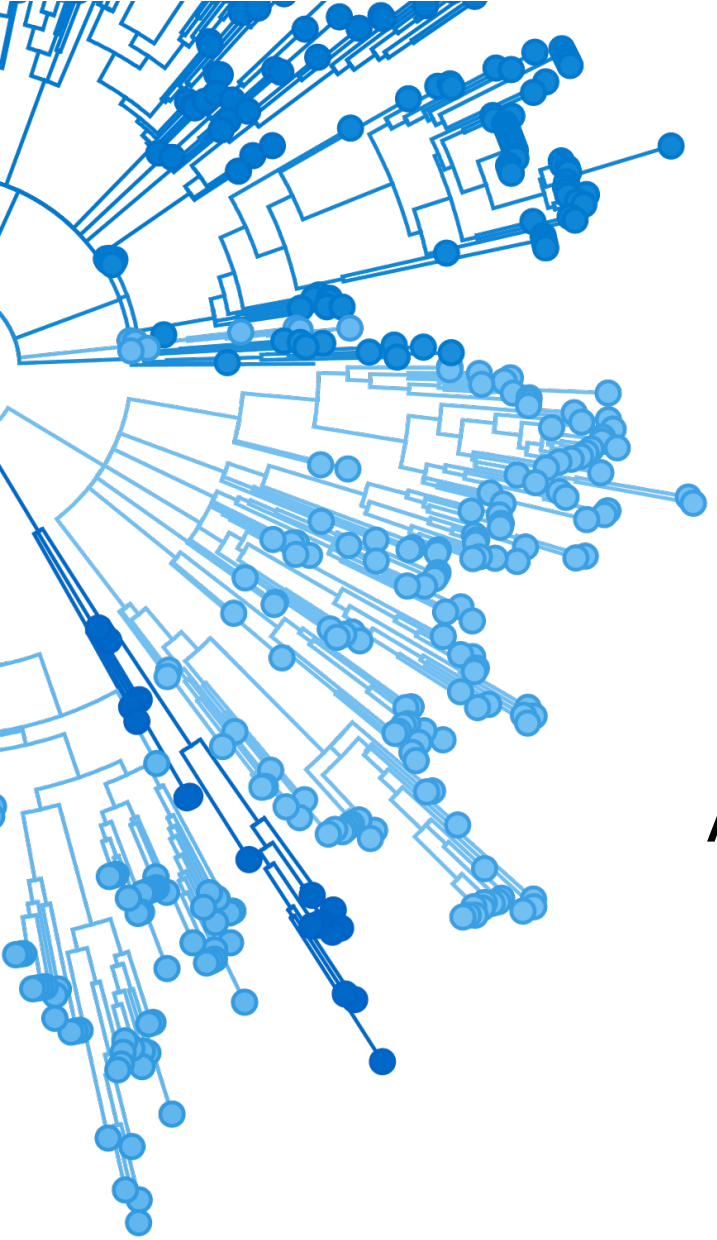
Anti-PD-1: Dosing 2x per week x 2 weeks (last dose Day 21).
ATRC-101 antibody: Dosing 2x per week x 3.5 weeks (last dose Day 28).

By engaging the innate immune system to modify the tumor microenvironment and drive an adaptive immune response involving T cells, ATRC-101 may lead to greater activity for agents that target T cells

PD-1, programmed death-1.

Key take-aways

- ATRC-101 exhibits **potent anti-tumor activity** and **prolongs survival** in mouse cancer models as a single agent, including in a model of the T cell-excluded phenotype
- Dosing with ATRC-101 quickly leads to changes in the profile of immune cells in the blood and tumor microenvironment—essentially remodeling the tumor microenvironment—in animal models
- Data and the literature support a model in which ATRC-101 bound to its target activates myeloid cells of the innate immune system via dual signaling through FcRs and TLRs
- Innate immune system engagement leads to a cytotoxic $CD8^+$ T cell response that destroys tumors, consistent with how viral RNA and other RNPs drive immune responses against tissue
- Data and mechanism support the use of ATRC-101 in combination with agents targeting T cells



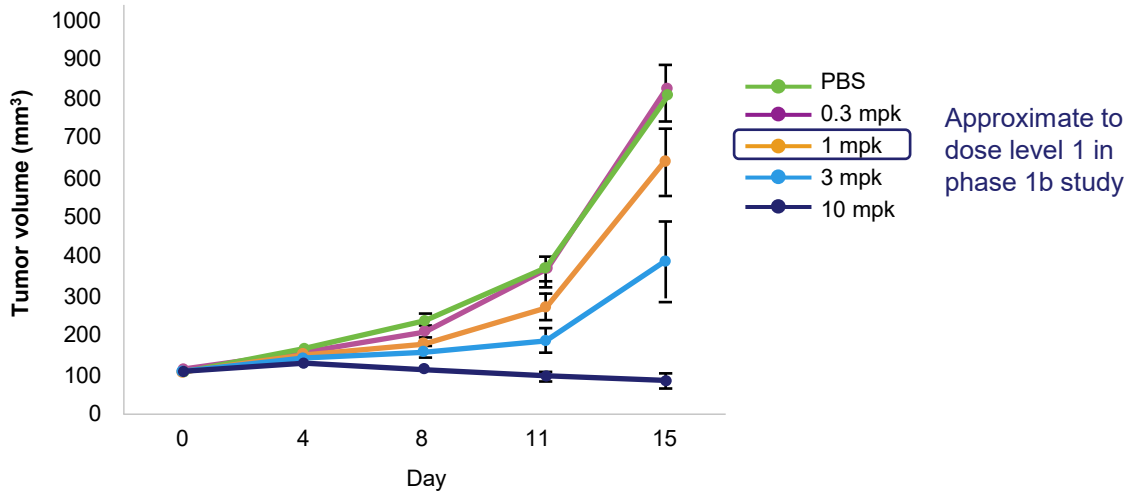
ATRC-101: Clinical Development

ATRC-101 possesses dose-dependent activity in preclinical models with no substantial safety concerns

Dose-dependent tumor growth inhibition and activity

Phase 1b dosing

- Correlation between dose and anti-tumor activity demonstrated in preclinical studies
- Starting dose in the phase 1B trial (0.3 mg/kg) approximates the 1 mg/kg dose evaluated in the EMT6 mouse model



Safety studies summary

Normal tissue binding

- No signal of toxicological significance observed across a wide range of normal human tissues in a GLP tissue cross-reactivity study

In vivo safety assessments

- Four repeat doses over 4 weeks of up to 100 mg/kg in NHPs were well tolerated and no definitive safety signals were observed
- No definitive safety signals observed in repeat dose safety studies in normal and tumor-bearing mice (EMT6)

GLP, good laboratory practice; NHP, nonhuman primate.

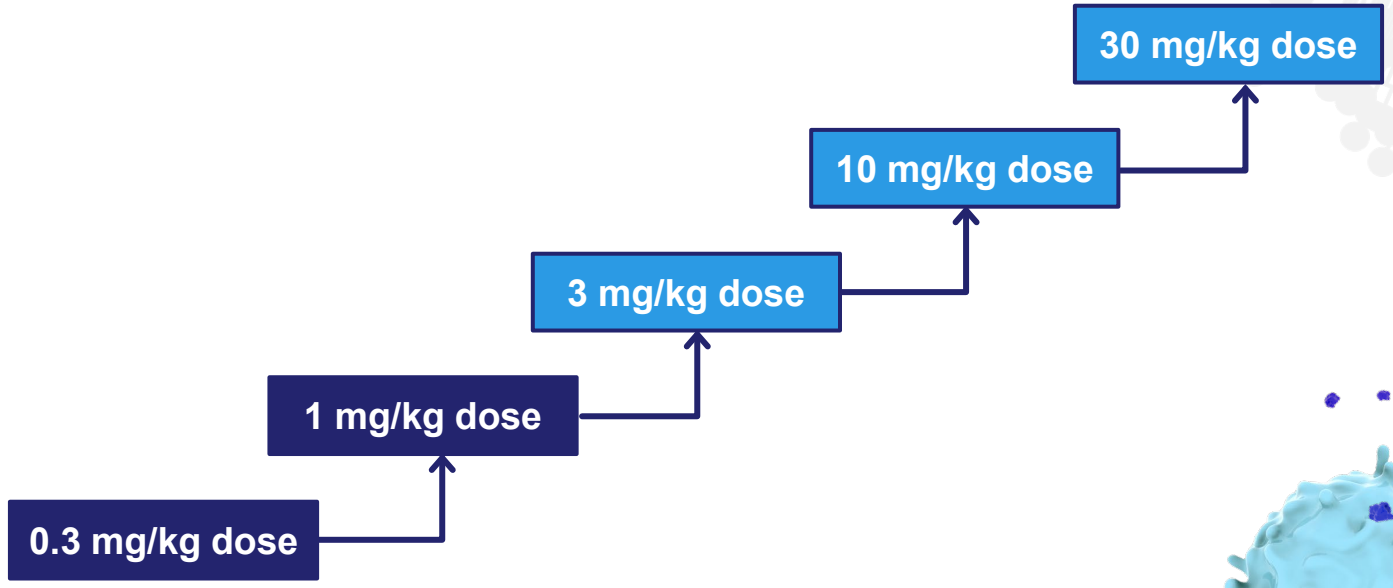
A phase 1b trial was initiated in early 2020

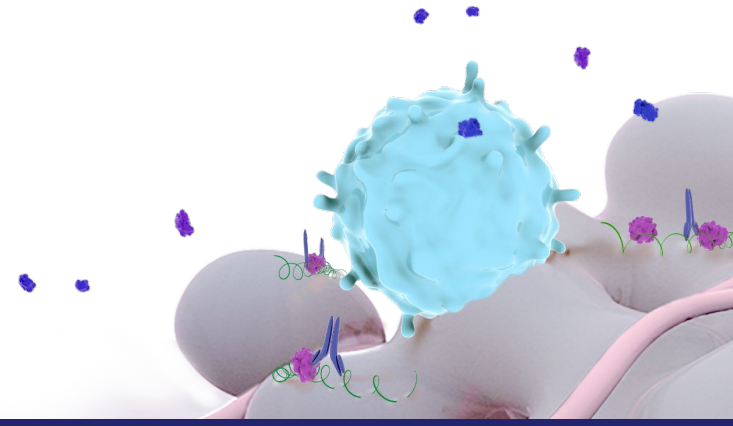
OBJECTIVES

- Characterize safety
- Determine MTD or RP2D
- Analyze target expression retrospectively
- Measure initial clinical activity
- Characterize tumor lymphocyte infiltration and other potential biomarkers of activity

MONOTHERAPY ARM

- Open-label, dose-escalation, adaptive 3+3 design
- Dosing cycle: IV infusion q21d
- Enrolling patients with advanced solid tumors that demonstrated >50% reactivity to ATRC-101 in preclinical studies, including:
  - Ovarian
  - NSCLC
  - Colorectal
  - Breast
  - Acral melanoma





IND, investigational new drug; MTD, maximum tolerated dose; NSCLC, non-small cell lung cancer; q21d, every 21 days; RP2D, recommended phase 2 dose.

Biomarker plan for phase 1b trial

Objectives: to characterize **tumors**, **plasma**, and **PBMCs** for expression of the ATRC-101 target, anti-tumor activity, immune response, and changes to the tumor microenvironment

Anti-tumor Activity	Immune Response	Patient Selection

• **Tumor**
  ○ Residual tumor in biopsy
  ○ Radiographic response by immune-based criteria
• **PBMC / Plasma / Serum**
  ○ Tumor markers (e.g., CA125, CEA)
  ○ Cell-free tumor DNA
	• **Tumor**
	  ○ Tumor-infiltrating lymphocytes
	  ○ TCR profiling
	  ○ Myeloid distribution
	  ○ Transcriptomics
	  ○ Proteomics
	• **PBMC / Plasma / Serum**
	  ○ Flow cytometry
	  ○ TCR profiling
	  ○ Cytokines
	  ○ Proteomics
		• **Tumor**
		  ○ Target expression
		  ○ Tumor microenvironment
		  ○ Genomics
		• **PBMC / Plasma / Serum**
		  ○ Soluble target
		  ○ Extracellular vesicles

CA125, cancer antigen 125; CEA, carcinoembryonic antigen; PMBC, peripheral blood mononuclear cell; TCR, T cell receptor.

Considerations for clinical development

Monotherapy (enrolling)

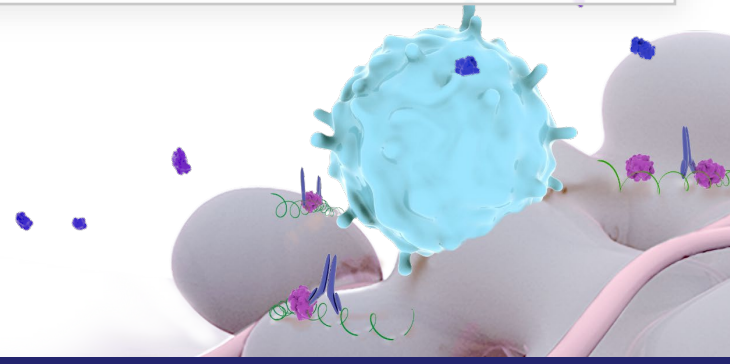
- **Rationale** – monotherapy activity in preclinical models
- **Trial stages***
  - Dose-escalation/expansion to characterize safety and identify RP2D
    - Eligibility – multiple tumor types defined by target expression
  - Efficacy expansion cohorts (single indication or biomarker defined)

Checkpoint inhibitor combination

- **Rationale**
  - Supported by MoA
  - Preclinical data suggestive of synergy
- **Trial stages***
  - Dose escalation with fixed dose of checkpoint inhibitor
  - Efficacy expansion/phase 2

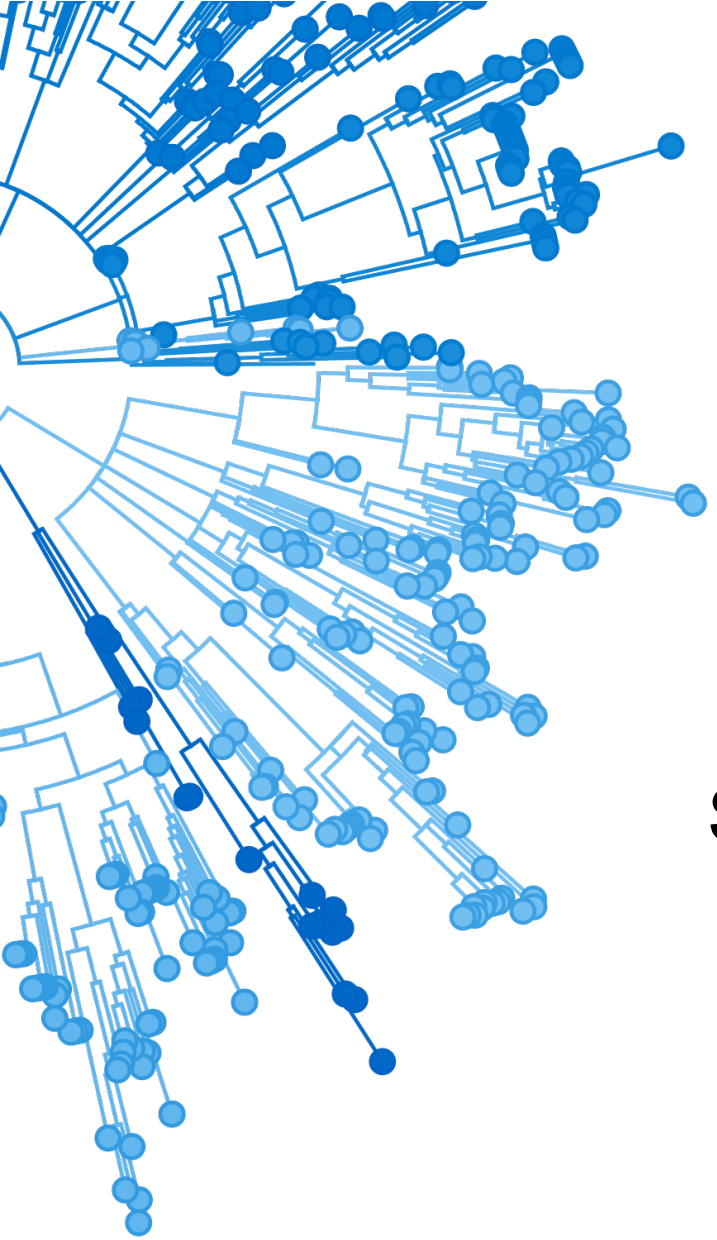
Chemotherapy combination

- **Rationale**
  - Chemo may increase target expression
  - Chemo may promote antigen release
  - Independent pathways to cell killing
  - Precedence of combining chemotherapy with tumor-targeting antibodies (e.g., trastuzumab plus paclitaxel)
  - Opportunity to introduce earlier in treatment course
- **Trial stages*** – phase 2 with safety run-in at dose level RP2D-1



* Trial stages and study designs are subject to FDA agreement and emerging data.

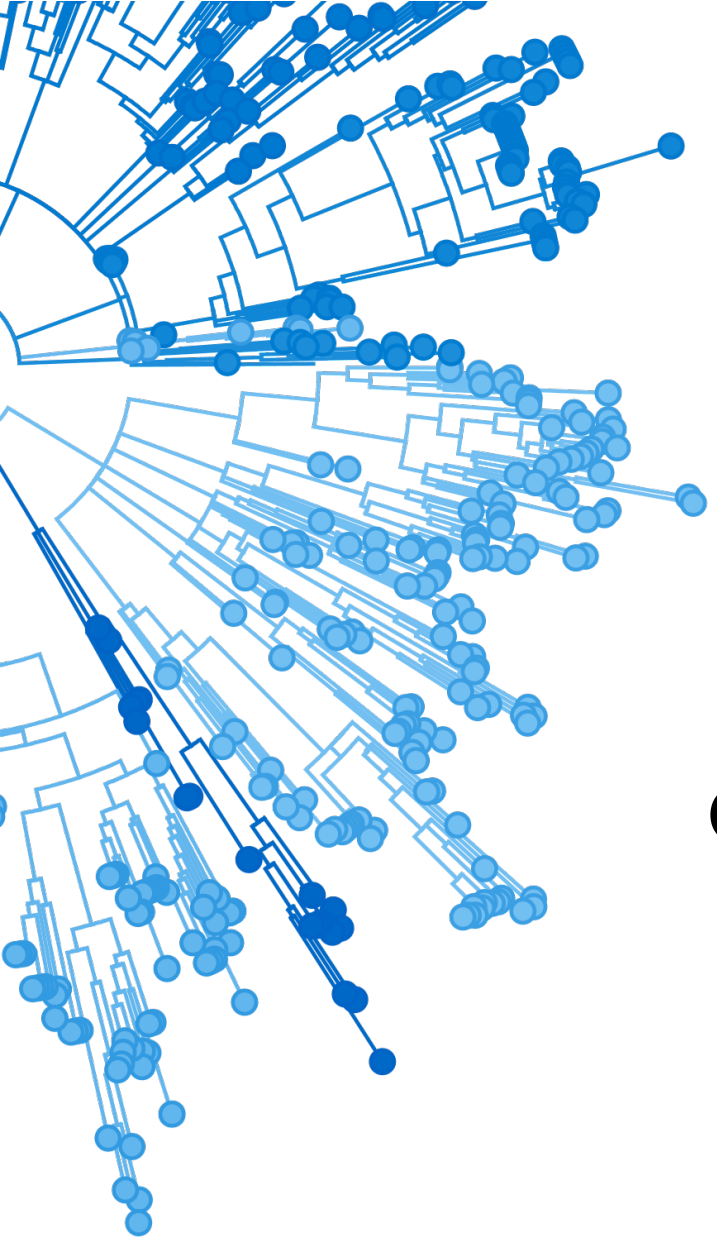
MoA, mechanism of action; RP2D, recommended phase 2 dose.



Summary and Conclusions

Summary of preclinical findings

- The novel target of ATRC-101 is a tumor-specific RNP complex found in multiple solid tumor types
  - Unlikely that this target or antibody binding it would have been found using traditional approaches
  - ATRC-101 binds to a polyadenylate-binding protein within its target RNP complex
  - In viral and autoimmune diseases, RNP complexes can drive tissue-destructive immune responses
- ATRC-101 bound to its RNP target activates the innate immune system, likely via FcR and TLR signaling within myeloid cells
- Myeloid activation occurs quickly, changing the tumor microenvironment and leading to a cytotoxic $CD8^+$ T cell response against tumor cells
- Certain chemotherapeutics induce the target of ATRC-101
- A strong rationale exists and data support using ATRC-101 in combination with some chemotherapeutics or T cell directed therapies
- A currently enrolling phase 1b trial is investigating ATRC-101 in patients with solid tumors



Q&A