

Corporate Overview

February 2022

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This presentation contains “forward-looking statements” within the meaning of the Securities Act of 1933 and the Securities Exchange Act of 1934, as amended, and the safe-harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by the use of terminology such as “will,” “may,” “expects,” “anticipates,” “believes,” “potential,” “plan,” “goal,” “estimate,” “likely,” “should,” and “intends,” and similar expressions that are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These forward-looking statements involve known and unknown risks and uncertainties that may cause the actual results, performance or achievements of Compugen to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements, including statements regarding the timing and success of our clinical trials, enrollment of patients, type and stage of clinical trials, presentation of data and our cash position expenditures and other financial information. Among these risks: The global COVID-19 pandemic may negatively impact the global economy and may also adversely affect Compugen’s business; clinical development involves a lengthy and expensive process, with an uncertain outcome and Compugen may encounter substantial delays or even an inability to begin clinical trials for any specific product, or may not be able to conduct or complete its trials on the timelines it expects; Compugen relies and expects to continue to rely on third parties to conduct its clinical trials and these third parties may not successfully carry out their contractual duties, comply with regulatory requirements or meet expected deadlines, and Compugen may experience significant

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Our Vision

Transforming patient lives by developing first-in-class therapeutics based on Compugen's computational target discovery platform

From Code to Cure®

Investment highlights



EXPAND

number of patients responding to treatment

- **Lead assets in Phase 1**
 - COM701 (anti-PVRIG)
 - COM902 (anti-TIGIT)
- **Encouraging clinical data**
 - Well-tolerated with immune activation & signals of antitumor activity
- **Partnered assets in Phase 1**
 - Bayer – bapotulimab (anti- ILDR2)
 - AstraZeneca- AZD2936 (TIGIT/PD-1 bispecific)



MAXIMIZE

value for patients

- **Strategic collaborations** with Pharma and academic institutions including Johns Hopkins



ADVANCE

immuno-oncology research

- Predictive computational platform of new drug targets
- Compugen discovered TIGIT, PVRIG & ILDR2



SOLID

financial position



Cash balance ~\$118M
as of Dec 31, 2021



2022 expected cash burn
~\$44-46M

Compugen's immuno-oncology pipeline

Executing a unique combination approach

PROGRAM TARGET	PARTNER	INDICATION	STAGE OF DEVELOPMENT
COM701 PVRIG		Ovarian, Breast, Endometrial, CRC (MSS) and NSCLC	Phase 1
COM701 + nivolumab PVRIG, PD-1	Bristol Myers Squibb	Ovarian, Breast, Endometrial and CRC (MSS)	Phase 1
COM701 + nivolumab + BMS-986207 PVRIG, PD-1, TIGIT	Bristol Myers Squibb	Ovarian, Endometrial, HNSCC and high PVRL-2 expressing tumors	Phase 1/2
COM902 TIGIT		Advanced Solid Tumors, Multiple Myeloma	Phase 1
COM902 + COM701 TIGIT, PVRIG		HNSCC, NSCLC, CRC (MSS)	Phase 1
Early-Stage Programs (including Myeloid Programs)		Undisclosed	Drug Discovery
Bapotulimab ILDR2	Bayer	Advanced solid tumors	Phase 1
Bapotulimab + Keytruda® ILDR2, PD-1	Bayer	Head & Neck Squamous Cell Carcinoma	Phase 1
TIGIT/PD-1 bispecific program* derived from COM902	AstraZeneca	Advanced or Metastatic Non-small Cell Lung Cancer	Phase 1/2

Partnerships with leading pharma companies



Clinical Trial Collaboration and Equity Investment October 2018

Collaborate on COM701 combo studies

Phase 1 dual combo with nivolumab

Phase 1/2 triple combination with nivolumab and BMS-986207 (anti-TIGIT)

Bristol Myers Squibb supplies nivolumab and BMS-986207

Compugen retains ownership and commercial rights to COM701

Bristol Myers Squibb right-of-first negotiation during exclusivity period

\$12M initial strategic equity investment in 2018, \$20M additional investment in 2021



Development and License Agreement August 2013

Development of an antibody based on a target discovered by Compugen's computational platform

Bapotulimab targeting ILDR2, in Phase 1

Over \$250M in future milestone and mid-to-high single digit royalty payments

Over \$30M in upfront and milestone payments to date



License Agreement March 2018

Development of bispecific and multi-specific I/O Ab candidates derived from COM902

AZD2936, a TIGIT/PD-1 bispecific in Phase 1/2




AstraZeneca responsible for R&D and commercial activities

\$18M in upfront and milestone payments to date

Up to \$200M milestone payments for first product. Payments for additional products and tiered royalties on future sales

Well executed milestone rich 2021

Striding forward as the leaders in the DNAM-1 axis, executing a unique combination approach

 EXPAND number of patients responding to treatment	Completed clinical studies	<input checked="" type="checkbox"/> Completed all dose escalation studies
	Presented clinical data	<input checked="" type="checkbox"/> Presented COM701 mono and dual combination data with nivolumab <input checked="" type="checkbox"/> First to present signals of mono anti-tumor activity with an IgG4 anti-TIGIT antibody, with low Fc-effector function <input checked="" type="checkbox"/> Presented first ever data on triple combination targeting PVRIG/TIGIT/PD-1
	Initiated clinical studies	<input checked="" type="checkbox"/> Initiated dual and triple combination biomarker informed cohort expansion studies in select tumors including inflamed and less inflamed tumors <input checked="" type="checkbox"/> Only ongoing study targeting TIGIT in combination with PVRIG in an anti-PD-1 free regimen
 MAXIMIZE value for patients	Progressed collaborations	<input checked="" type="checkbox"/> Expanded collaboration with Bristol Myers Squibb and \$20M equity investment <input checked="" type="checkbox"/> First patient dosed in AstraZeneca Ph1 study with TIGIT/PDL-1 bispecific derived from COM902
 ADVANCE immuno-oncology research	Published research	<input checked="" type="checkbox"/> Presentation of DNAM-1 axis research at scientific conferences <input checked="" type="checkbox"/> Published on the biology and potential therapeutic relevance of the DNAM-1 axis in Cancer Discovery ⁽¹⁾ and on COM902 in Cancer Immunology Immunotherapy ⁽²⁾

- <https://cancerdiscovery.aacrjournals.org/content/11/5/1040.abstract>
- <https://link.springer.com/article/10.1007/s00262-021-02921-8>

*Dual combination studies: COM701+COM902; COM701 + nivolumab

**Triple combination study: COM701+nivolumab+ BMS-986207

Expected 2022/2023 catalysts

Reported data will guide regulatory strategy defined on a cohort-by-cohort basis

H2 2022

Anti-tumor activity, translational and safety data from:

- **COM701 + nivolumab Phase 1 CRC (MSS) cohort**

2023+

Anti-tumor activity, translational and safety data from anticipated fully enrolled cohorts:

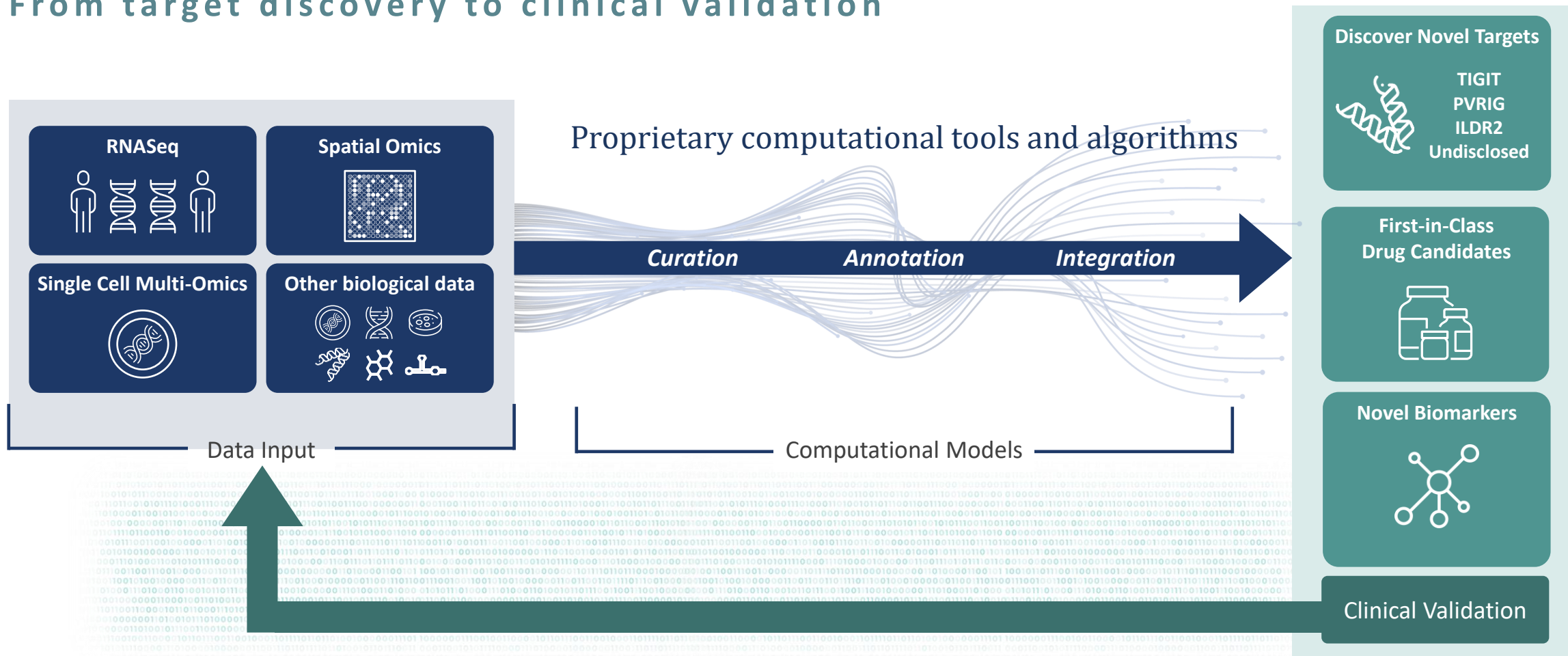
- **COM701 + nivolumab Phase 1 ovarian, breast and endometrial cohorts**
- **COM701 triple combination* Phase 1 /2 ovarian, endometrial and HNSCC and additional high expressing PVRL2 tumors****
- **COM701 + COM902 Phase 1 CRC (MSS), HNSCC, NSCLC cohorts**

*Triple combination of COM701 with nivolumab and BMS-986207 (anti-TIGIT)

**a cohort of subjects who have high expression of PVRL2, which we will start enrolling following the assessment of correlation between PVRL2 level of expression and response

Pioneering predictive computational discovery platform

From target discovery to clinical validation



Diverse experienced leadership team

Management team



Anat Cohen-Dayag, PhD
President & CEO



Ari Krashin
Chief Financial & Operating Officer



Henry Adewoye, MD
SVP, Chief Medical Officer



Oliver Froescheis, PhD
SVP, Business & Corporate Development



Eran Ophir, PhD
VP, Research and Drug Discovery



Zurit Levine, PhD
SVP, Technology Innovation



Pierre Ferre, PhD, Dr. Vet. Med.
Vice President, Preclinical Development



Yaron Turpaz, PhD
SVP & Sr. Advisor Computational Discovery



Dorit Amitay
VP, Human Resources

Board Of Directors

Paul Sekhri

Chairman of the Board

Anat Cohen-Dayag, PhD

President & CEO, Director

Jean-Pierre Bizzari, MD

Director

Gilead Halevy

Director

Kinneret Livnat Savitzky, PhD

Director

Eran Perry

Director

Sanford (Sandy) Zweifach

Director



Strategic advisors

Industry veterans, renowned oncologists and immunologists

Scientific Advisory Board



Drew Pardoll, MD, PhD

Chairman

Multi-year strategic collaboration



Antoni Ribas, MD, PhD



Nils Lonberg, PhD

Former SVP, Oncology Discovery Biology
Bristol Myers Squibb



Elliott Sigal, MD, PhD

Strategic Advisor

Former CSO, EVP & Director, Bristol Myers
Squibb



Miriam Merad, MD, PhD



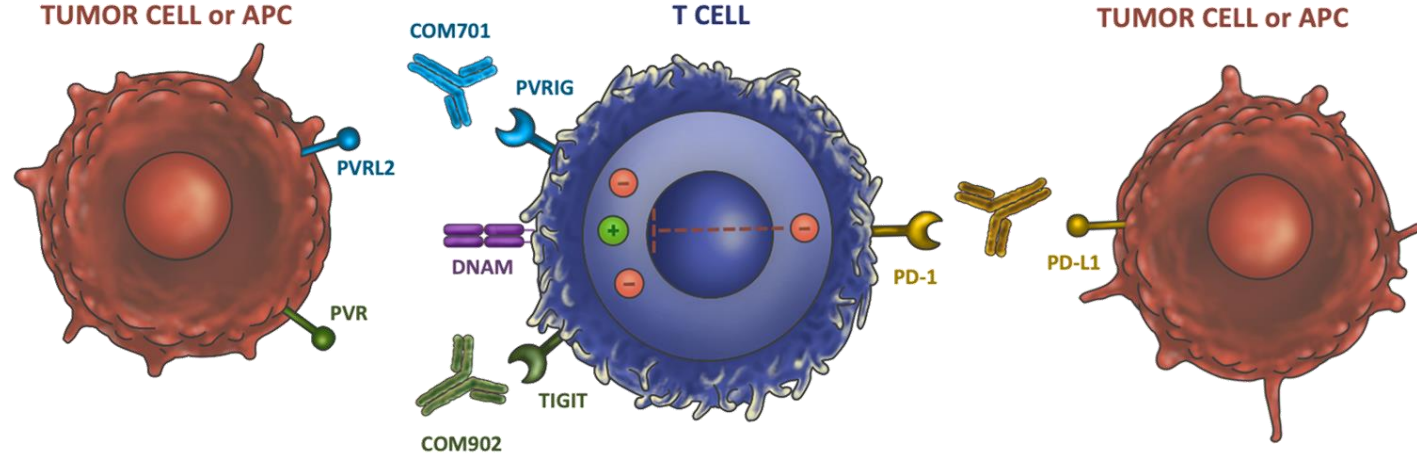
Howard Soule, PhD



Iain McInnes, FRCP, PhD

DNAM axis potential to be a game changer in the fight against cancer

PVRIG may be the missing piece when current checkpoint inhibitors fail



- PVRIG and TIGIT discovered by Compugen's discovery platform
- DNAM axis – two parallel and complementary inhibitory pathways (PVRIG & TIGIT)
- Potential intersection between PVRIG/TIGIT and PD-1 pathway
- PVRIG is potentially unique in generating new waves of T cells to infiltrate the TME
- PVRL2 broadly expressed in PD-L1 high and low tumors

Support combination approach to overcome immunotherapy resistance

PVRIG AND TIGIT – Complementary but distinct pathways

PVRIG preferentially binds PVRL2

TIGIT preferentially binds PVR



Differentially expressed in tumor types

PVRL2 expression is more dominant than PVR on certain tumor types, including breast, endometrial and ovarian



Differentially expressed on immune cell types

TIGIT and PVRIG are both expressed on T and NK cells

PVRIG more dominant on early differentiated memory T cells

TIGIT is highly expressed on Tregs relative to PVRIG



Differentially expressed in the tumor microenvironment

PVRL2 has higher expression on some myeloid lineage cells, particularly DC subsets

Biomarker driven approach

Targeting tumor types most likely to respond to treatment

Indication selection for cohort expansion studies

Driven by computational discovery prediction validated in the lab

Pre-clinical data from DNAM-1 axis members expression in tumor samples

Focus on tumor types with highest PVRIG, and PVRL2 expression and initial signals of anti-tumor activity

Anti-tumor activity reported supports the strategy

ID of biomarkers for future patient selection

Exploring correlation of expression of PVRIG pathway with clinical response

Exploratory biomarker ID approaches in paired liquid and tumor biopsies

Work ongoing in cohort expansion studies where paired biopsies are mandatory

PD biomarkers to validate MOA

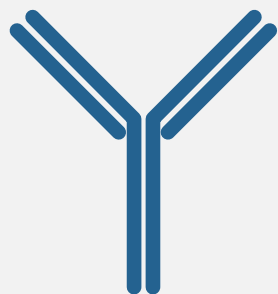
Measure immune modulation induced by COM701 and combinations in peripheral blood and tumor biopsy before and during treatment

Data at ASCO June'21 supports the immune mediated MOA of COM701

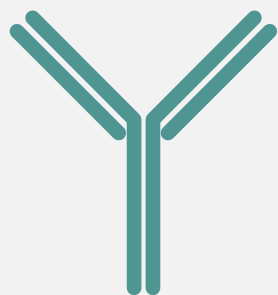
Translational data from SITC '21 supports potent immune activation with triple blockade

COM701, COM902 data reported








All comer patients progressed on standard of care



COM701

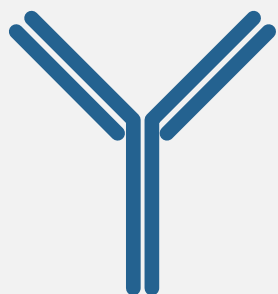


COM902

 Open label design	COM701 dose escalation & expansion	COM701 + nivolumab dose escalation	COM701 + nivolumab + BMS-986207 dose escalation	COM902 dose escalation
 Phase	1	1	1	1
 # of patients	36	15	13	18
 # prior therapies*	6	5	10	7
 Primary endpoint	Safety & tolerability, PK/PD, preliminary anti-tumor activity			
 Results presented	ASCO '21	ASCO '21	SITC '21	SITC '21
 CT identifier	NCT03667716	NCT03667716	NCT04570839	NCT04354246

COM701, COM902 ongoing clinical cohort expansion program








Patients who have progressed on standard of care



COM701

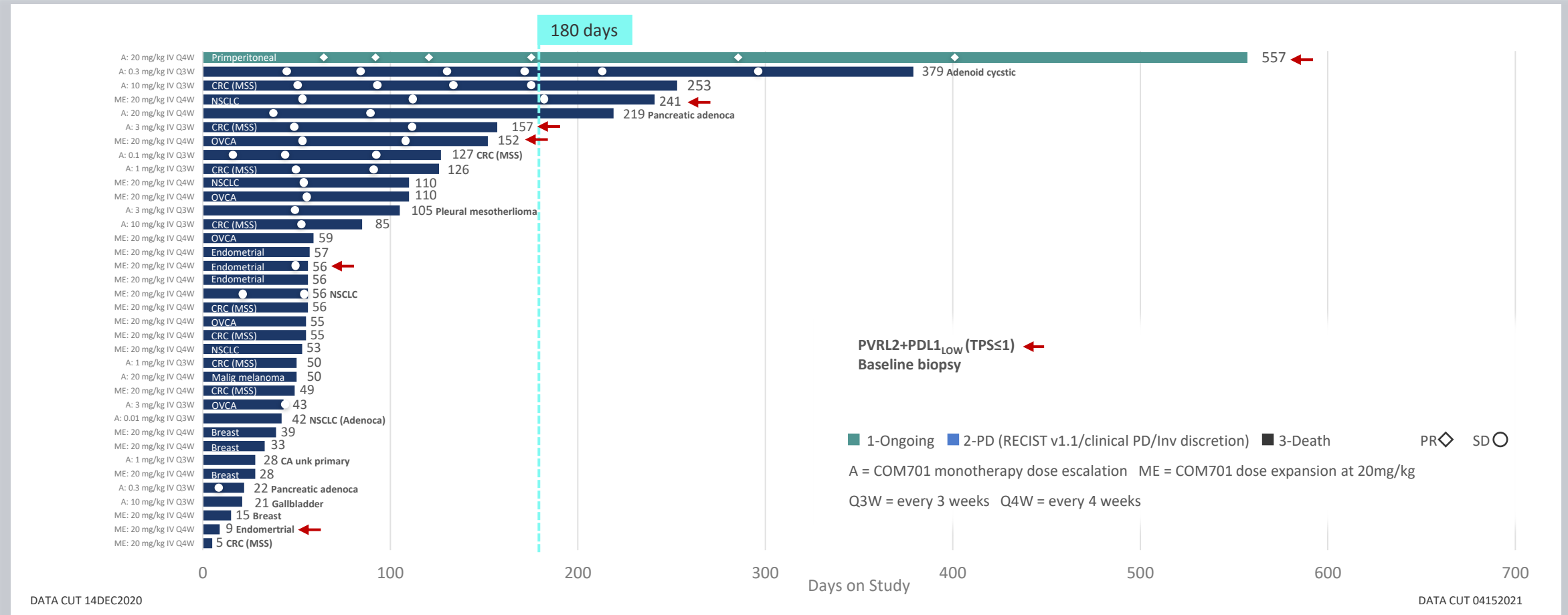


COM902

 Open label design	COM701 + nivolumab	COM701 + nivolumab + anti-TIGIT BMS-986207	COM902 RDFE	COM701 + COM902 both at RDFE
 Phase	1	1/2	1	1
 # of patients	20 per cohort	20 per cohort	10	20 per cohort
 Tumor type	OC, BC, EC, CRC (MSS)	OC, EC, HNSCC, PVRL2 high tumors	Adv. Solid tumors MM	HNSCC, NSCLC, CRC (MSS)
 Primary endpoint	Safety & tolerability, PK/PD, preliminary anti-tumor activity			
 Status	First patient dosed Q2 '21	First patient dosed Q3 '21	Enrolling	First patient dosed Q4 '21
 CT identifier	NCT03667716	NCT04570839	NCT04254246	NCT04354246

Swimmer plot COM701 monotherapy dose escalation and expansion Investigator assessed responses

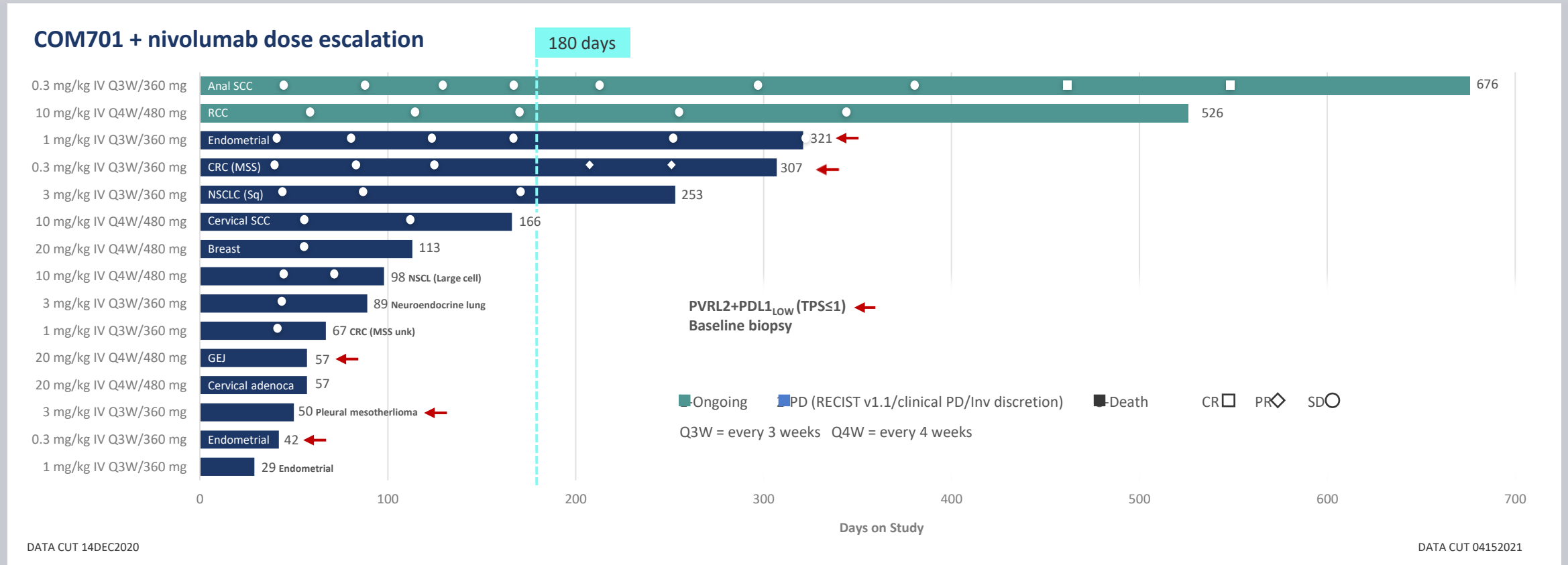
Activity also seen in PD-L1 low tumors



Swimmer plot COM701 with nivolumab

Investigator assessed responses

Activity also seen in PD-L1 low tumors



COM701, nivolumab and BMS-986207 combination well tolerated in dose escalation study



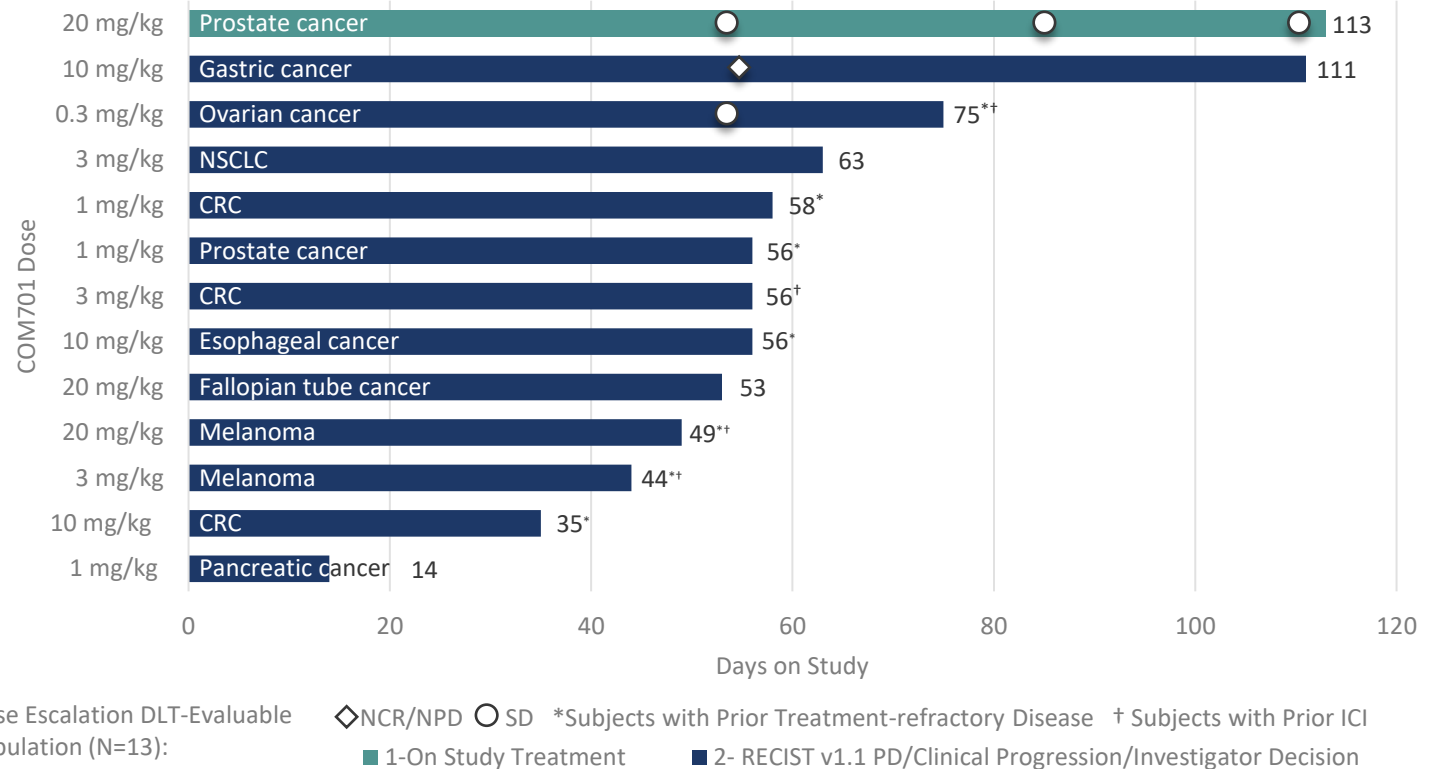
Favorable safety and tolerability



A maximum tolerated dose was not reached



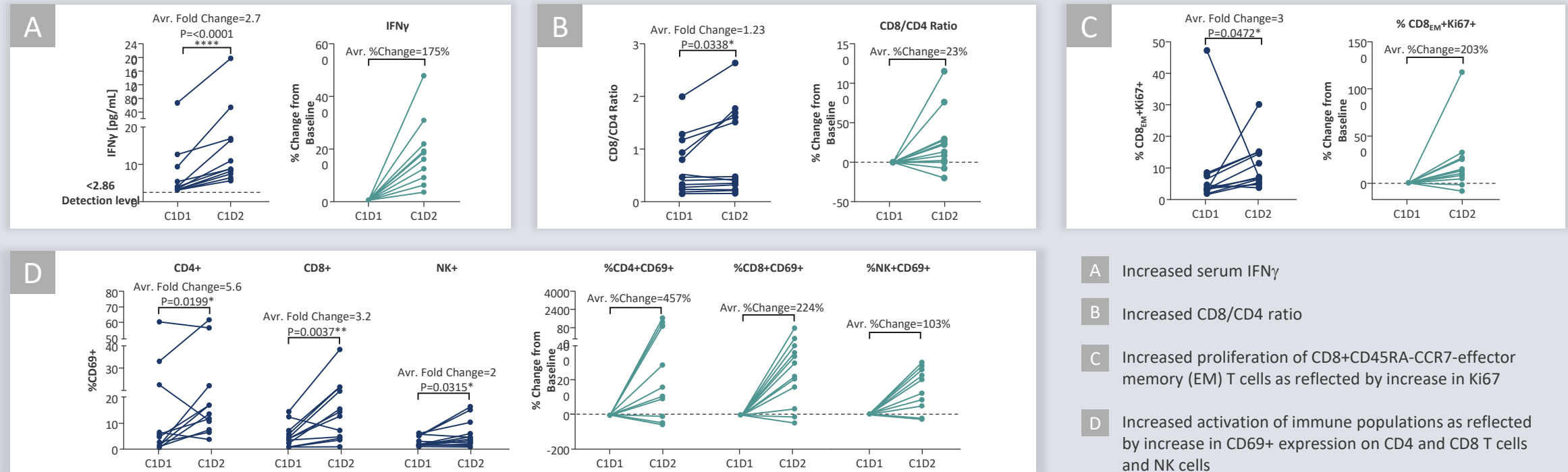
Best response of stable disease in a heavily pretreated all-comer patient population



Study clears the path to a comprehensive evaluation of Compugen's DNAM-1 axis hypothesis in select expansion cohorts*

Potent activation of the immune system with COM701, nivolumab and BMS-986207 triple blockade

Increased T and NK cell activation, memory T Cell proliferation and IFN γ induction in blood at all COM701 doses



COM902 monotherapy well tolerated in dose escalation study



Favorable safety and tolerability



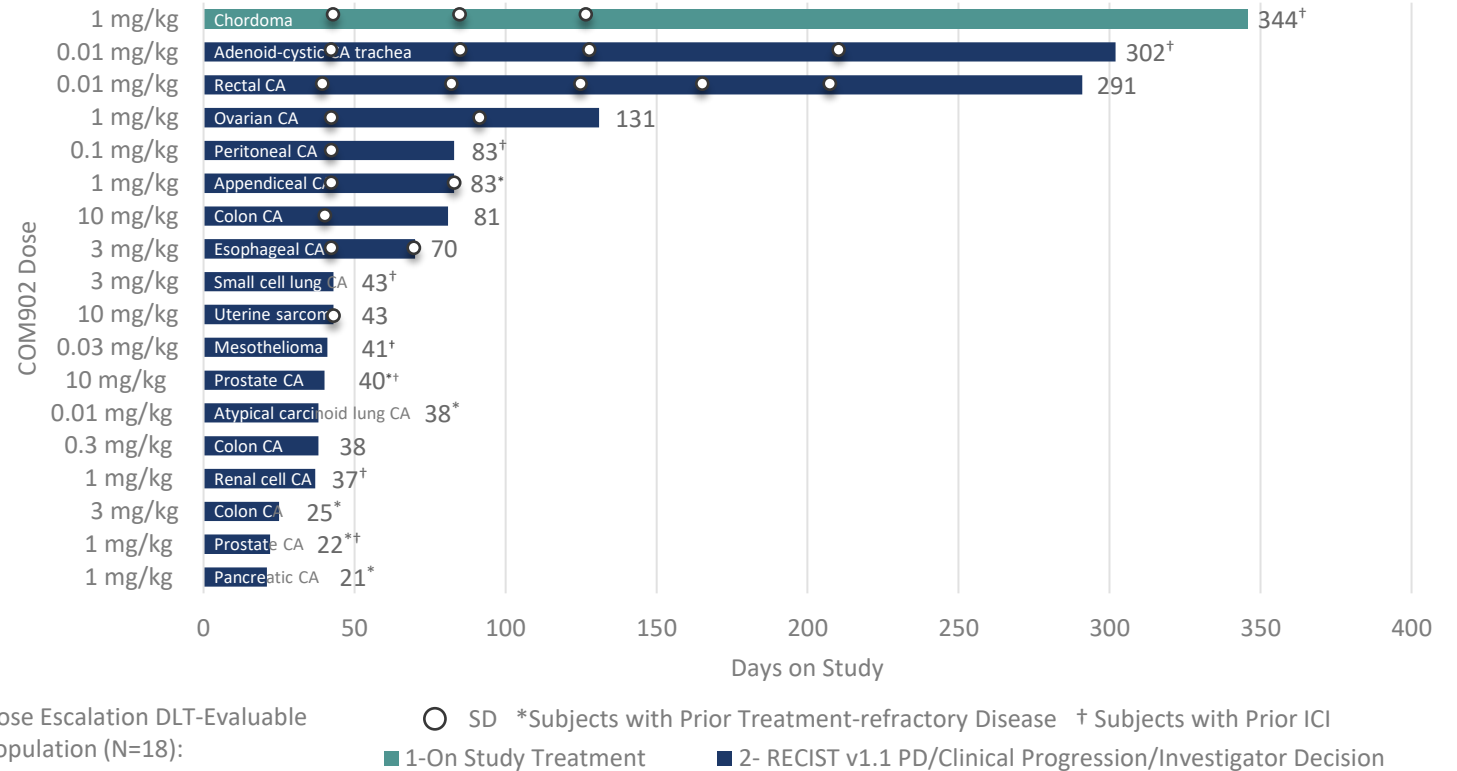
Peripheral receptor occupancy >90% from 0.1 mg/kg



Dose proportional PK profile



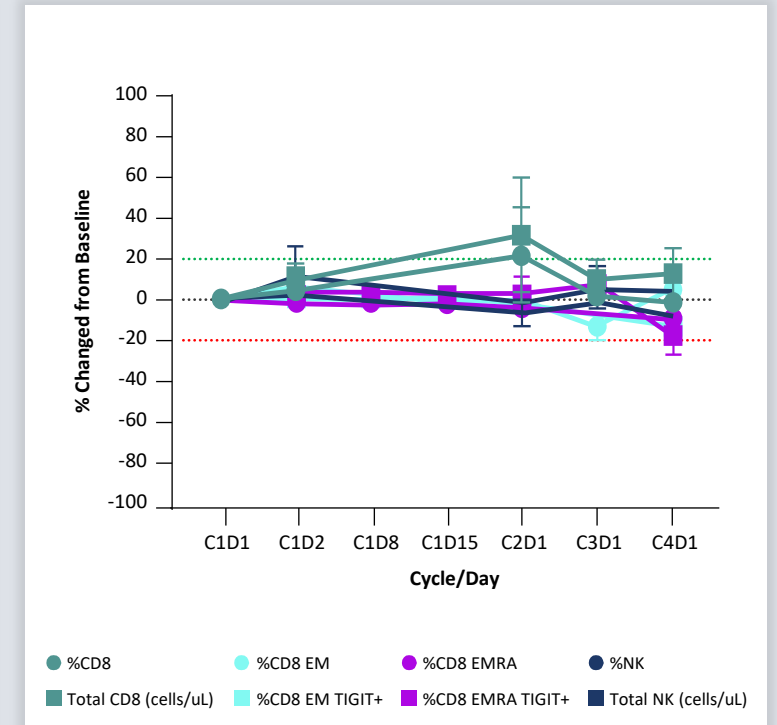
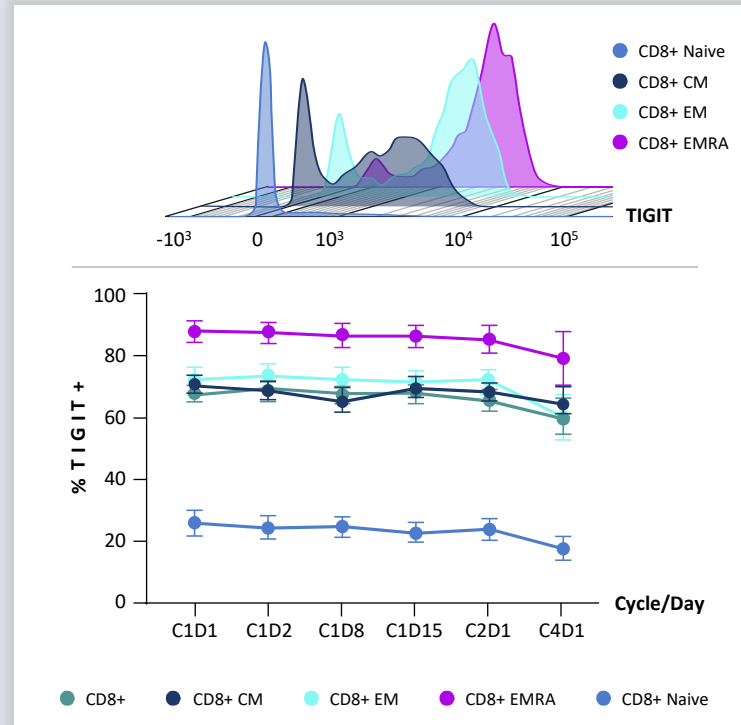
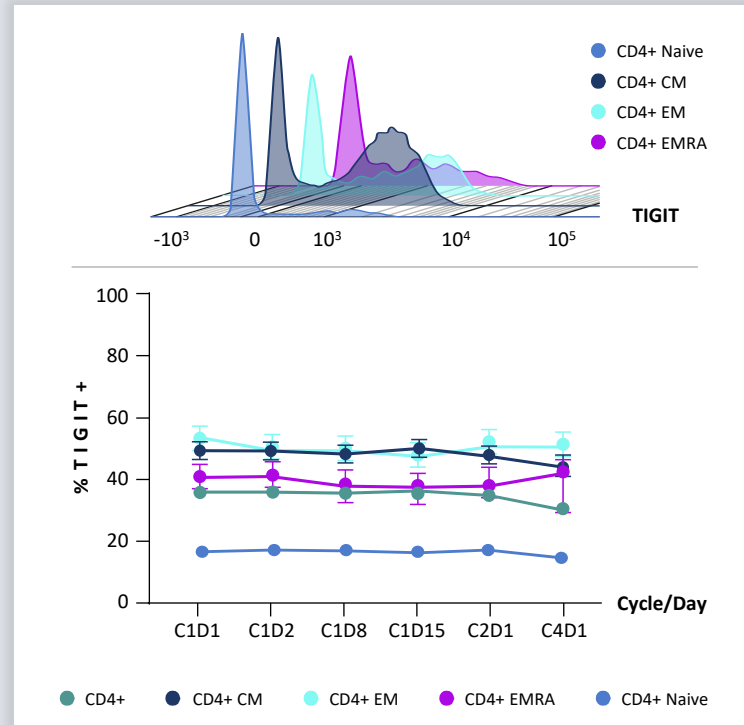
Best response of stable disease in 9 patients (50%)



COM902 + COM701 Phase 1 study Ongoing

COM902 avoids depletion of major TIGIT+ expressing lymphocytes- NK, CD4 and CD8 T cells

Supporting rationale for selecting high affinity COM902 as a IgG4 reduced Fc effector function anti-TIGIT antibody



COM902 avoids CD8+ T Cells depletion and potential associated risks

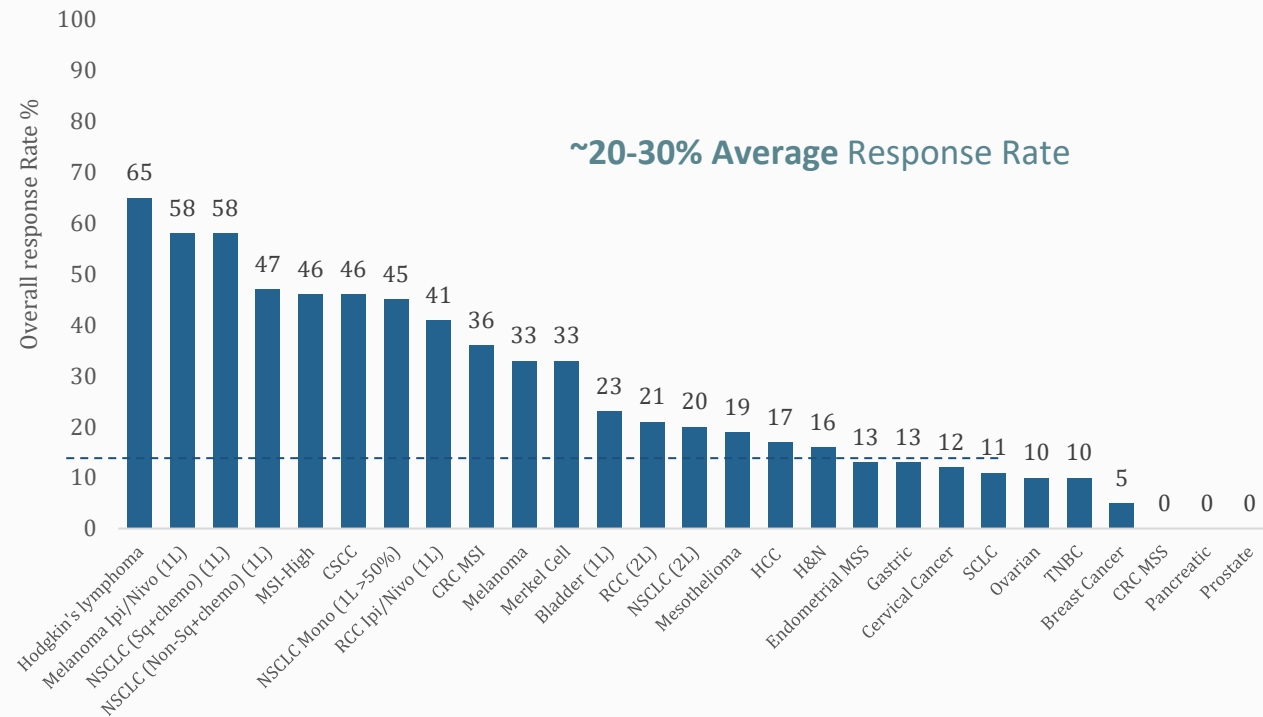


APPENDIX

An opportunity to address a significant unmet need

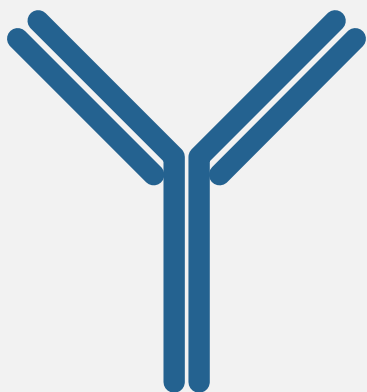
70-80% of patients non-responsive to approved cancer immunotherapies

PD-1 monotherapy/combination activity across indications



- Clinical strategy primarily focused on PD-1 non-responsive cancer indications
- New drug targets and biological pathways aimed to address non-responsive patient populations
- Mechanism-driven first-in-class combinations
- Biomarker strategy to select patients based on pathway expression profile

COM701: A potentially first-in-class anti-PVRIG antibody



COM701

Dose escalation studies clear the path for ongoing cohort expansion studies in select tumor types

- Well-tolerated in mono, dual and triple combination
- Signals of antitumor activity in mono and dual combination, high DCR; confirmed CR and PRs; durable disease control
- Best response of SD in triple combination in heavily pretreated (median prior therapies n=10) all-comer population
- Translational data support potent immune activation with triple blockade

Science-driven biomarker strategy targeting indications with elevated expression of DNAM1 axis members

- Targeting tumor types most likely to respond to treatment
- Clinical opportunities in endometrial, breast, lung, ovarian, colorectal and other solid tumors

Combination therapy strategy based on deep understanding of DNAM1 axis biology

- Dual and triple combinations with TIGIT and PD-1 inhibitors have potential to address PD-1 non-responsive patient populations
- Preclinical models support anti-tumor effects with dual and triple combinations

Strong IP position

- Internally discovered and developed, potentially first-in-class asset
- Issued and pending patents for composition of matter, use and combinations worldwide

Summary of investigator-assessed response

COM701 monotherapy and dual combination with nivolumab

(Per RECIST v1.1 DLT-Evaluable Population)

Data from monotherapy and combination dose escalation and monotherapy expansion studies

	Mono (N = 36) N (%)	Dual Combo (N = 15) N (%)
Overall Response rate (CR+PR)	1 (3)	2 (13)
Disease control rate (CR+PR+SD)	17 (47)	10 (67)
Patients with CR, PR, SD ≥ 6 months	5 (14)	5 (33)
Patients who received prior treatment with ICI (any line of therapy)	11 (31)	7 (47)
Best response of CR, PR or SD in pts with prior treatment with ICI	7 (19)	6* (40)
Prior treatment-refractory disease***		
Best response of CR, PR or SD in patients with prior treatment	15 (42)	6 (40)
-refractory disease	7 (19)	4** (27)
Best response		
Complete response	0 (0.0)	1 (7)
Partial response	1 (3)	1 (7)
Stable Disease	16 (44)	8 (53)
Progressive Disease	13 (36)	4 (27)
Not assessed per RECIST v1.1 (clinical PD prior to 1 st imaging assessment)	6 (17)	1 (7)

*Includes a patient with anal SCC with confirmed CR DLT-evaluable set: patients enrolled into dose escalation, patients in COM701 monotherapy expansion cohort

**Includes a patient with CRC (MSS) with confirmed PR

***Prior treatment refractory disease: Best response of PD to last therapy prior to enrollment into this study.

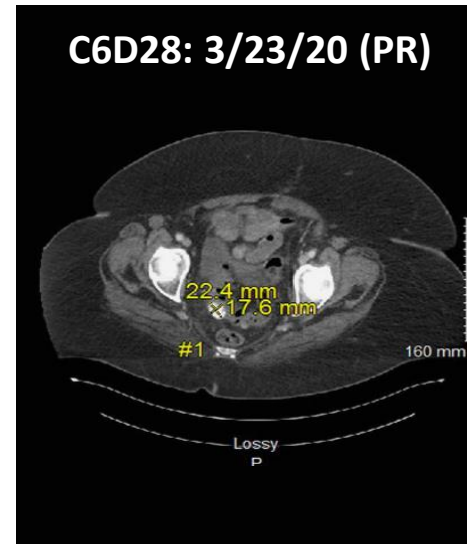
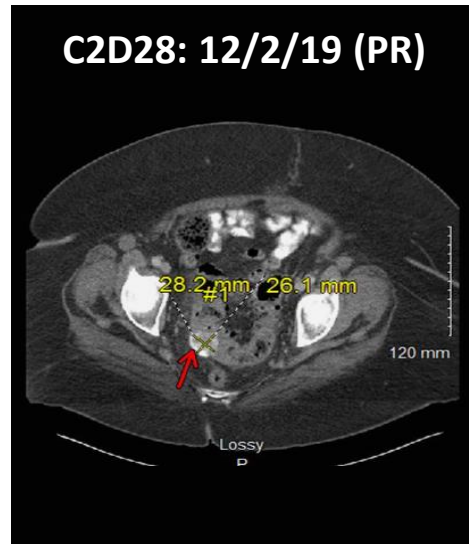
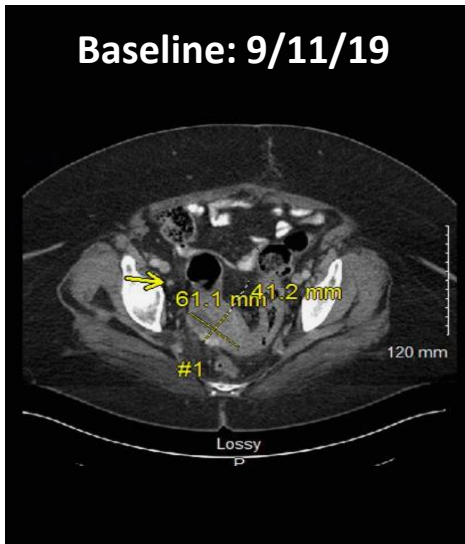
ASCO June 2021 presentation, modified

Confirmed PR ongoing treatment 18 months in patient with primary peritoneal cancer (platinum resistant, MSS)

63-year-old female with microsatellite stable platinum resistant primary peritoneal cancer

PDL1 negative, MRE11 mutation; 3 prior lines of chemotherapy

Study Treatment: COM701 20mg/kg IV Q 4 weeks



Had 3 prior lines of SOC treatment

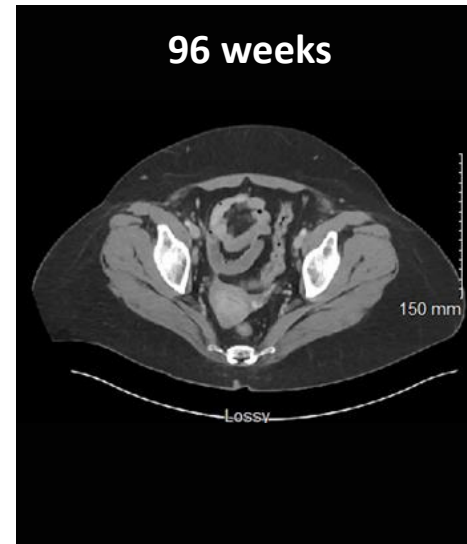
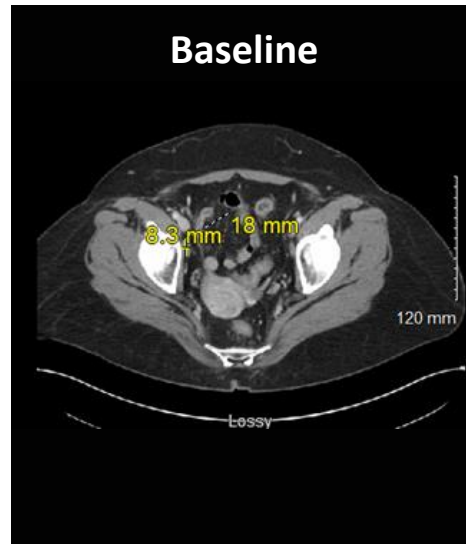
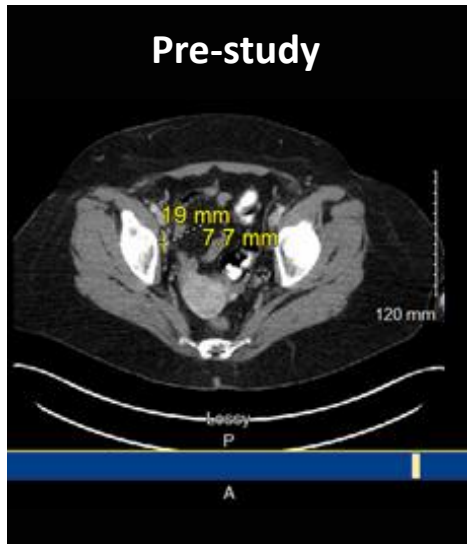
- *1st line carboplatin/paclitaxel, SD (best response)*
- *Carboplatin/paclitaxel, PD (best response)*
- *Doxorubicin/Bevacizumab, PR (best response, d/c due to toxicity)*
- *Enrolled into mono dose escalation (COM701 20 mg/kg IV Q4 wks)*

Confirmed CR ongoing treatment for 22 months in patient with anal SCC HPV+

57-year-old female patient with evaluable disease but not measurable per RECIST v1.1 at study entry (not mandatory in dose escalation)

Increasing adenopathy & SUV uptake at study entry

Node stable and felt to be reactive/resolved

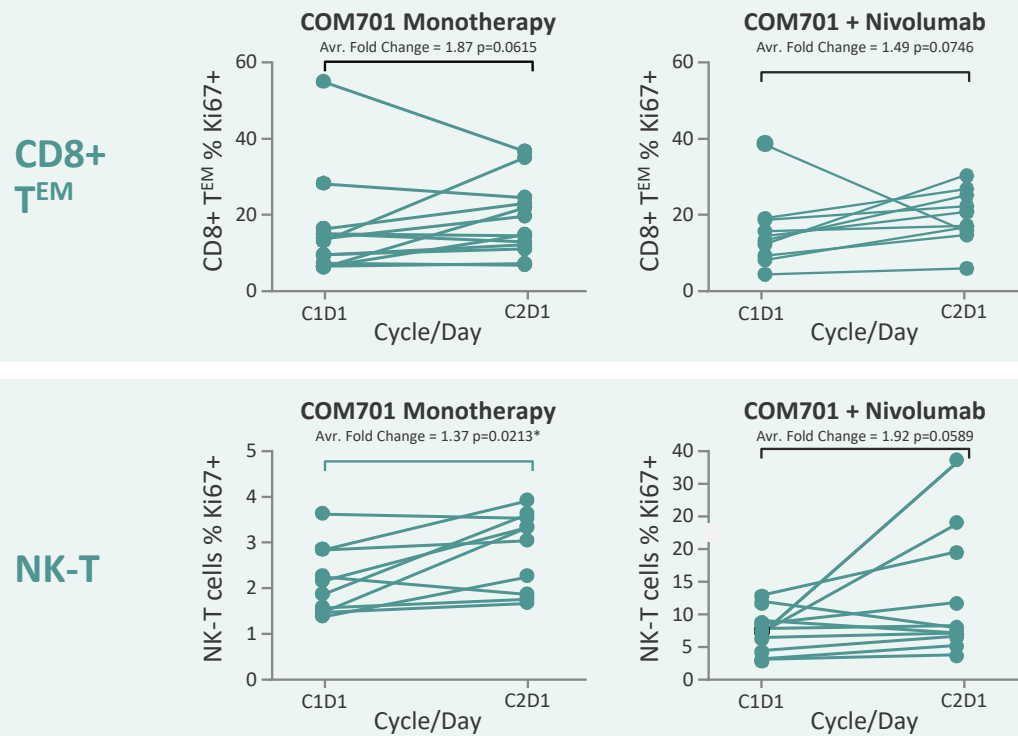


Had 3 prior lines of chemotherapy

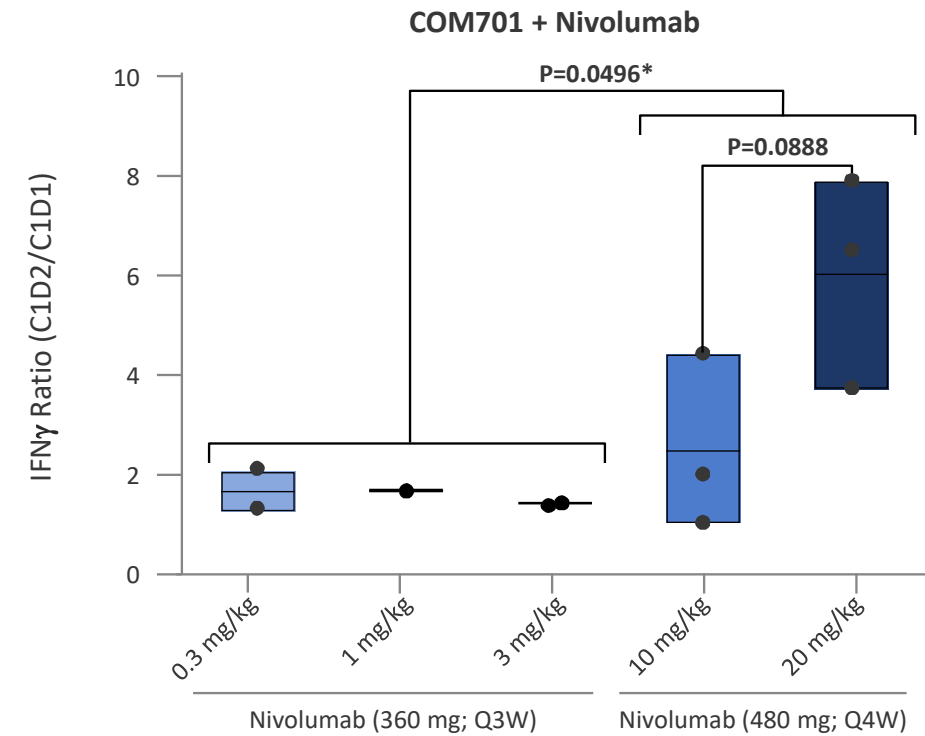
- 5-FU/mitomycin, SD (best response)
- 5-FU/platinum, PR (best response for 8 months)
- Nivolumab monotherapy, CR (best response for 9 months). Enrolled (within 1 month after progression on nivolumab monotherapy) to combination dose escalation arm: COM701 0.3 mg/kg + nivolumab 360 mg both IV Q3 wks

COM701 alone and with nivolumab associated with immune activation in peripheral blood

Trend of increasing proliferation of CD8+ T_{EM} (effector memory T cells) and NK-T cells

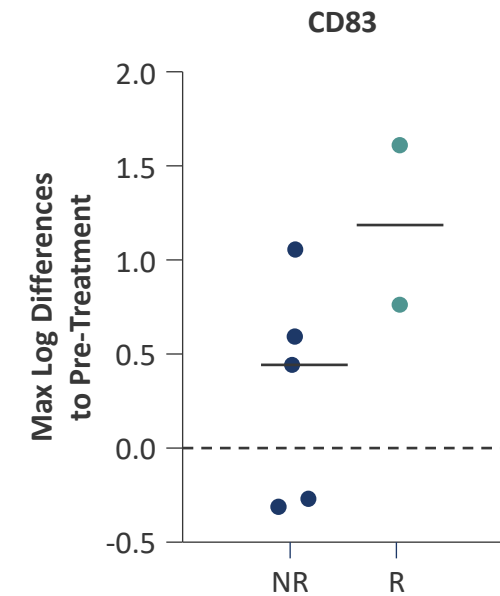
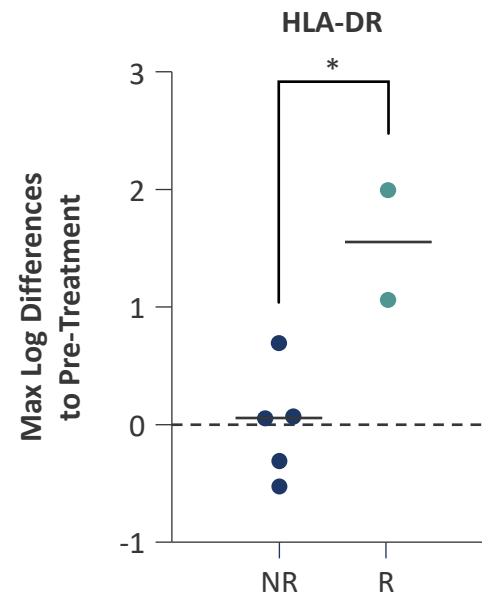
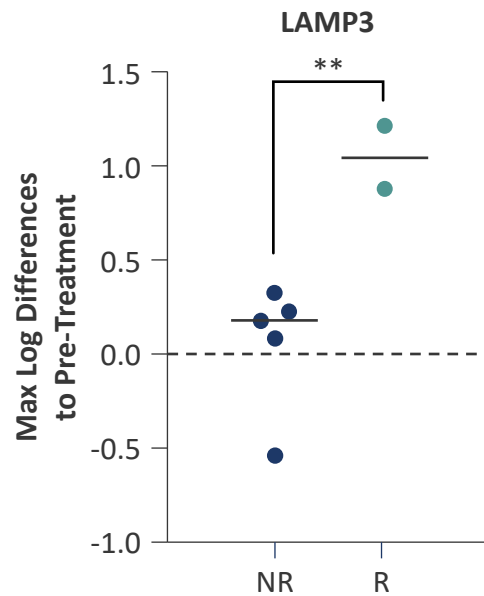


Increase in serum IFN γ with a trend for COM701 dose dependency



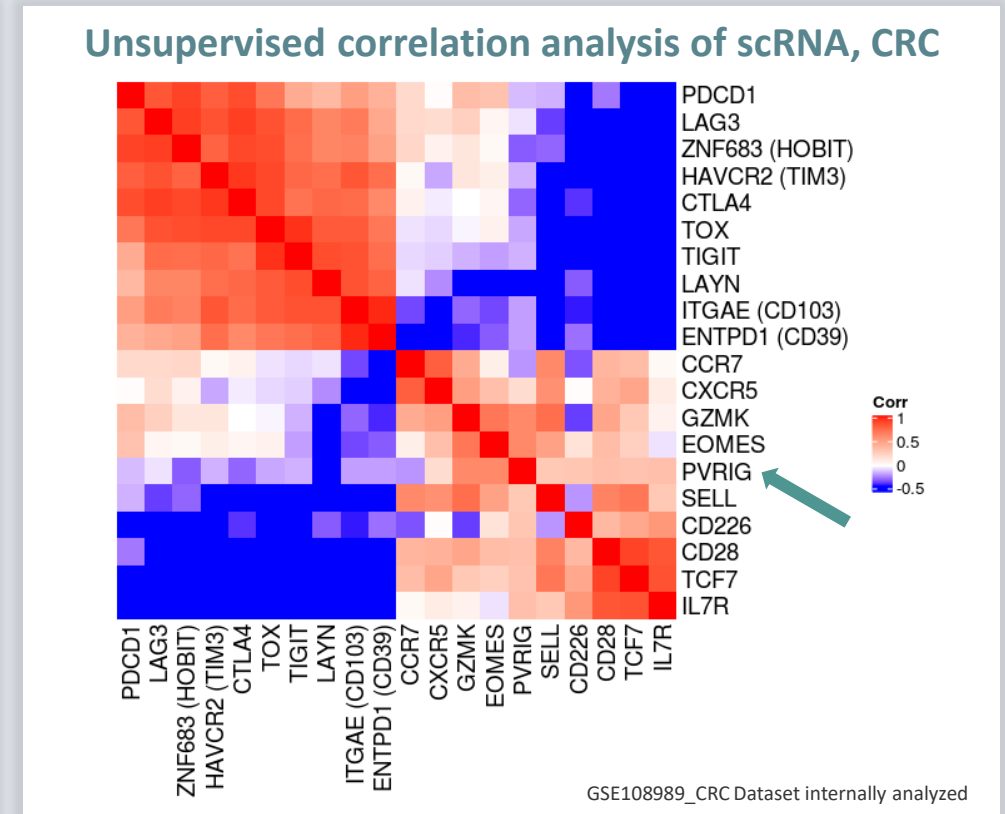
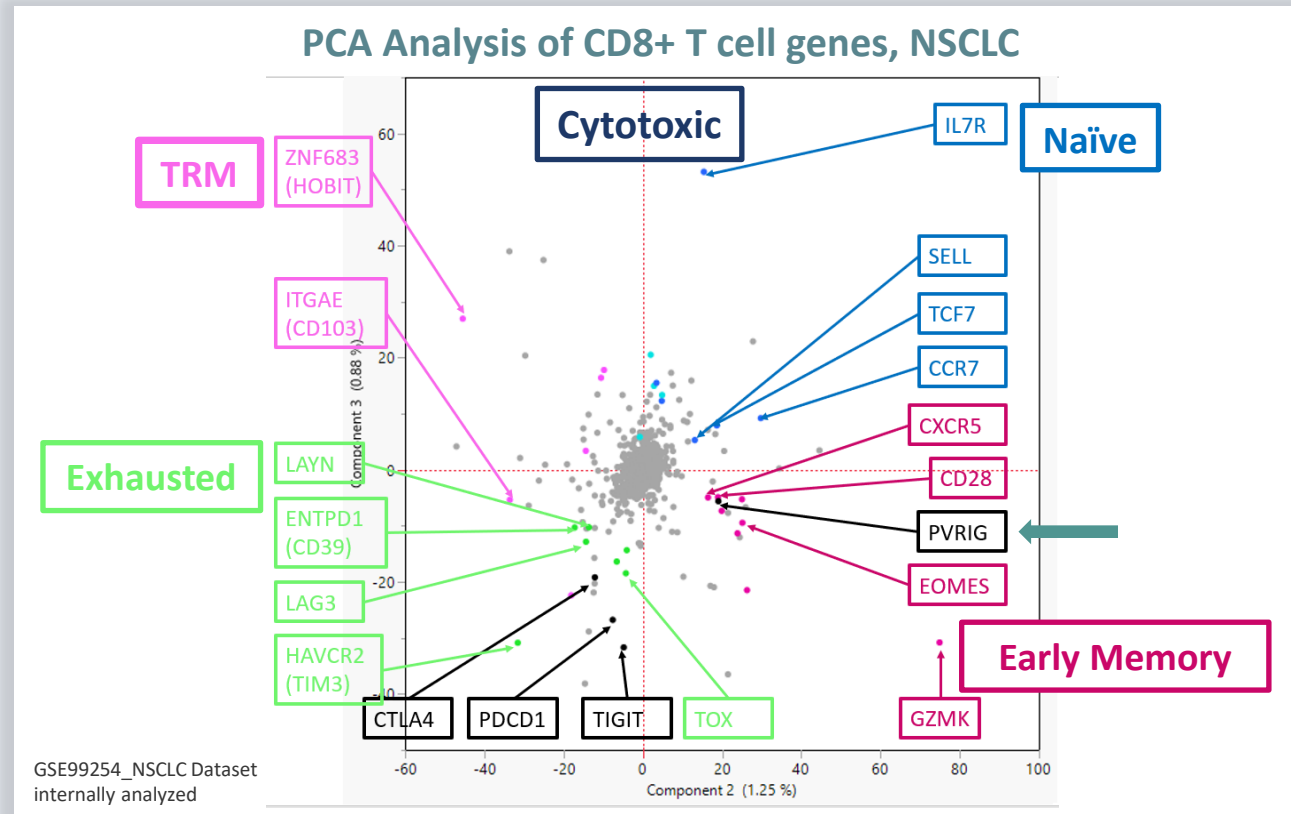
Induction of activated DC markers in serum of patients responding to COM701+ nivolumab

2 patients who responded to treatment with COM701 + nivolumab had a higher induction of activated DC markers in their serum compared to non-responders



PVRIG uniquely clusters with early memory differentiation/ stem-like genes

Potential for optimal Tscm activation, expansion and generation of effector T cells

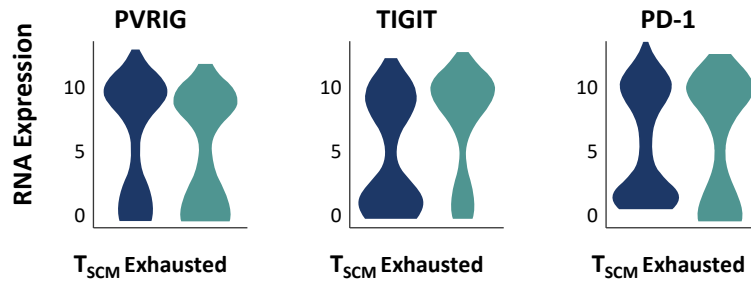


PVRIG/PVRL2 expression on key immune cell populations

Involved in T cell priming (T_{SCM} , TLS and DC)

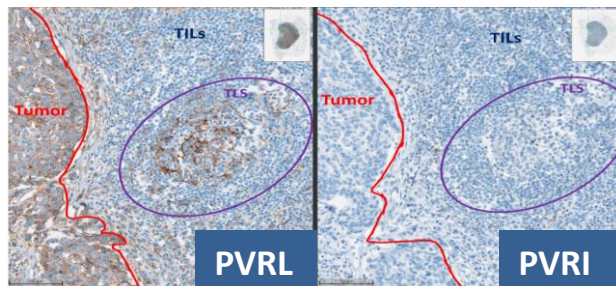
NSCLC sample;
single cell RNA
analysis of Gau et
al Nat Med 2018

PVRIG expression on T_{SCM} cells



PVRL2 expression on tertiary lymphoid structures

TNBC sample,
Internal IHC
Data



PVRL2 expression across various dendritic cell types

