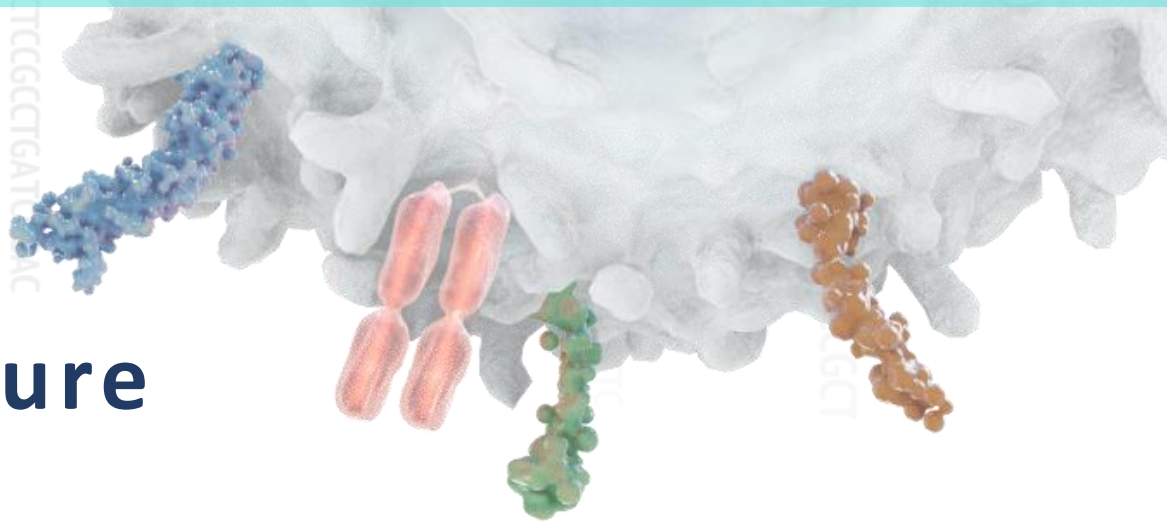
compugen

FROM CODE TO CURE®



Compugen: From Code to Cure

BIOMED ISRAEL

Eran Ophir, SVP Research and Drug Discovery

May 2022

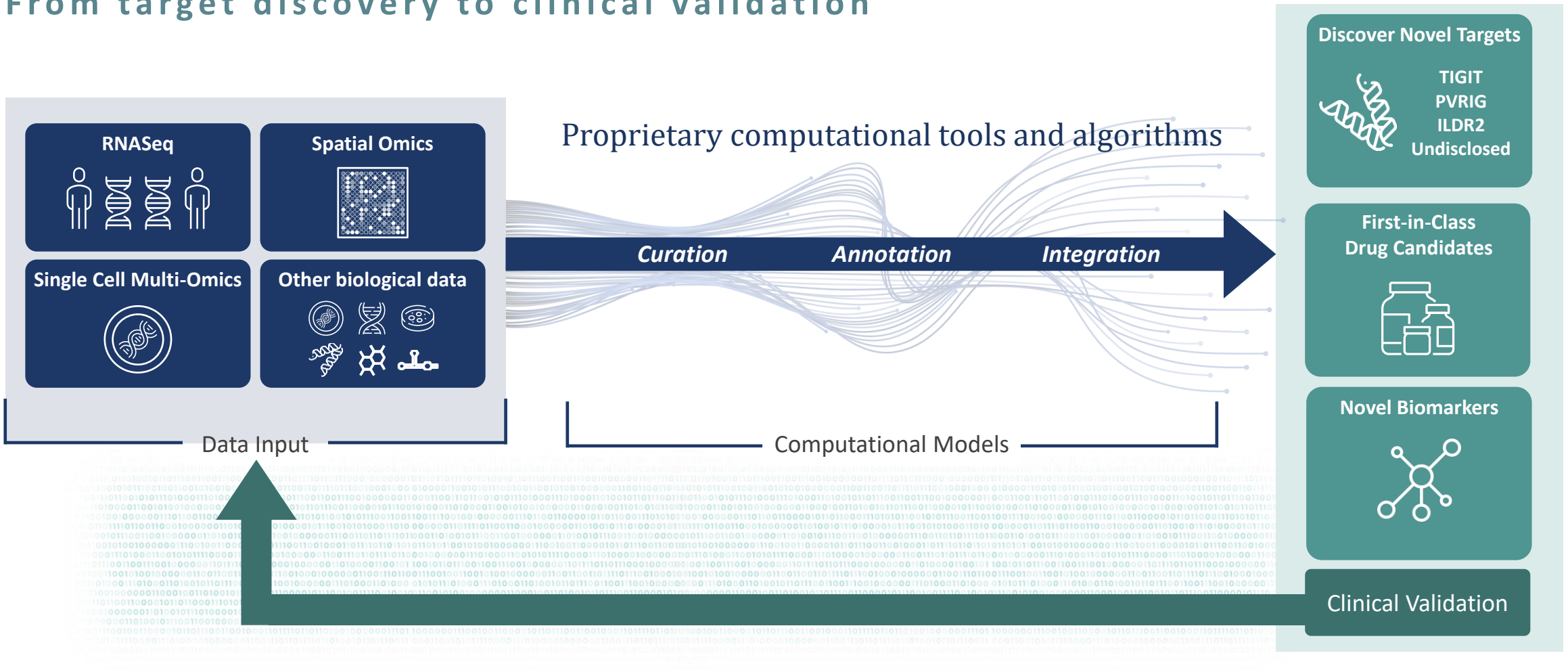
Safe Harbor Statement

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 of clinical trials, presentation of data and our cash position and expenditures. 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 delays in the conduct of its clinical trials as well as significant increased expenditures; Compugen’s business model is substantially dependent on entering into collaboration agreements with third parties and Compugen may not be successful in generating adequate revenues or commercializing aspects of its business model; Compugen’s approach to the discovery of therapeutic products is based on its proprietary computational target discovery infrastructure, which is unproven clinically; and Compugen does not know whether it will be able to discover and develop additional potential product candidates or products of commercial value. These and other factors, including the ability to finance the Company, are more fully discussed in the "Risk Factors" section of Compugen’s most recent Annual Report on Form 20-F as filed with the Securities and Exchange Commission (“SEC”) as well as other documents that may be subsequently filed by Compugen from time to time with the SEC. In addition, any forward-looking statements represent Compugen’s views only as of the date of this presentation and should not be relied upon as representing its views as of any subsequent date. Compugen does not assume any obligation to update any forward-looking statements unless required by law. Certain studies and data presented herein have been conducted for us by other entities as indicated where relevant. Intellectual property, including patents, copyrights or trade secret displayed in this presentation, whether registered or unregistered, are the intellectual property rights of Compugen. Compugen's name and logo and other Compugen product names, slogans and logos referenced in this presentation are trademarks of Compugen Ltd. and/or its subsidiary, registered in the U.S.A., EU member states and Israel.

compugen
FROM CODE TO CURE®

Pioneering Predictive Computational Discovery Platform

From target discovery to clinical validation



compugen
FROM CODE TO CURE®

Compugen 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

Bristol Myers Squibb™

BAYER

AstraZeneca

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
FROM CODE TO CURE®

Compugen's Immuno-oncology Pipeline

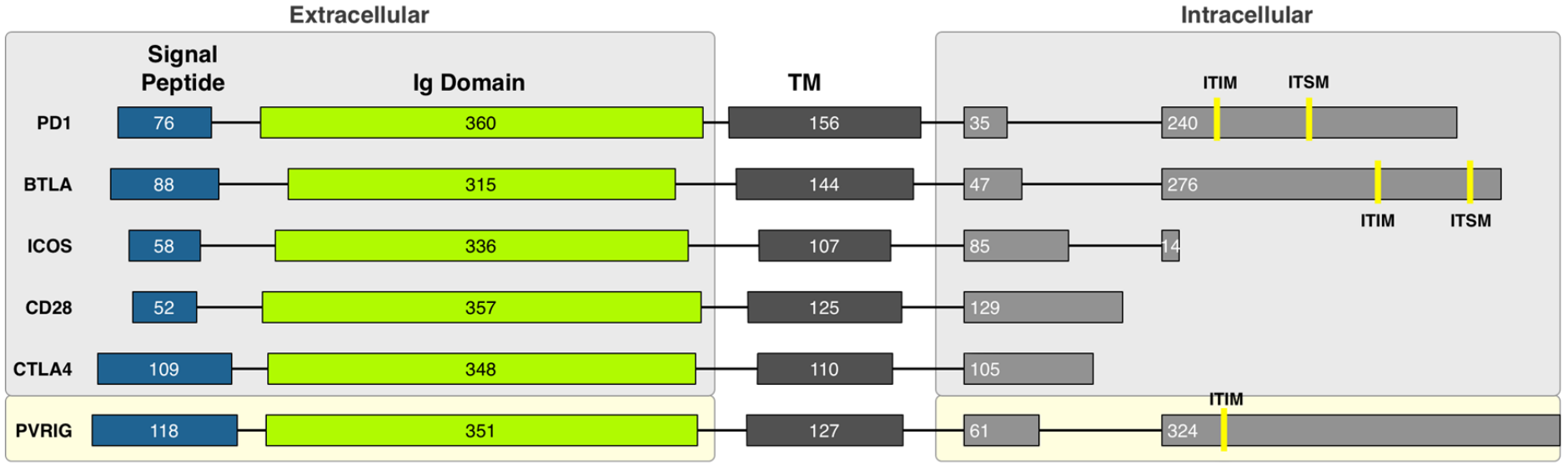
Executing a unique combination approach

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

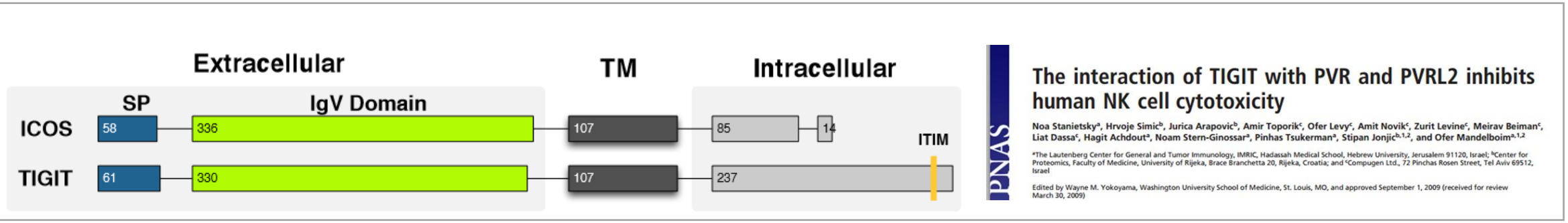
Compugen-owned programs Partner programs * AZD2936

compugen FROM CODE TO CURE®

Compugen Discovered Two New Checkpoints in the DNAM-1 Axis



TIGIT identified by Compugen as a potential immune checkpoint in 2009



PNAS

The interaction of TIGIT with PVR and PVRL2 inhibits human NK cell cytotoxicity

Noa Stanietsky[a], Hrvoje Simic[b], Jurica Arapovic[b], Amir Toporik[c], Ofer Levy[c], Amit Novik[c], Zurit Levine[c], Meirav Beiman[c], Liat Dassa[c], Hagit Achdout[a], Noam Stern-Ginossar[a], Pinhas Tsukerman[a], Stipan Jonjic[b,1,2], and Ofer Mandelboim[a,1,2]

[a]The Lautenberg Center for General and Tumor Immunology, IMRIC, Hadassah Medical School, Hebrew University, Jerusalem 91120, Israel; [b]Center for Proteomics, Faculty of Medicine, University of Rijeka, Brace Branchetta 20, Rijeka, Croatia; and [c]Compugen Ltd., 72 Pinchas Rosen Street, Tel Aviv 69512, Israel

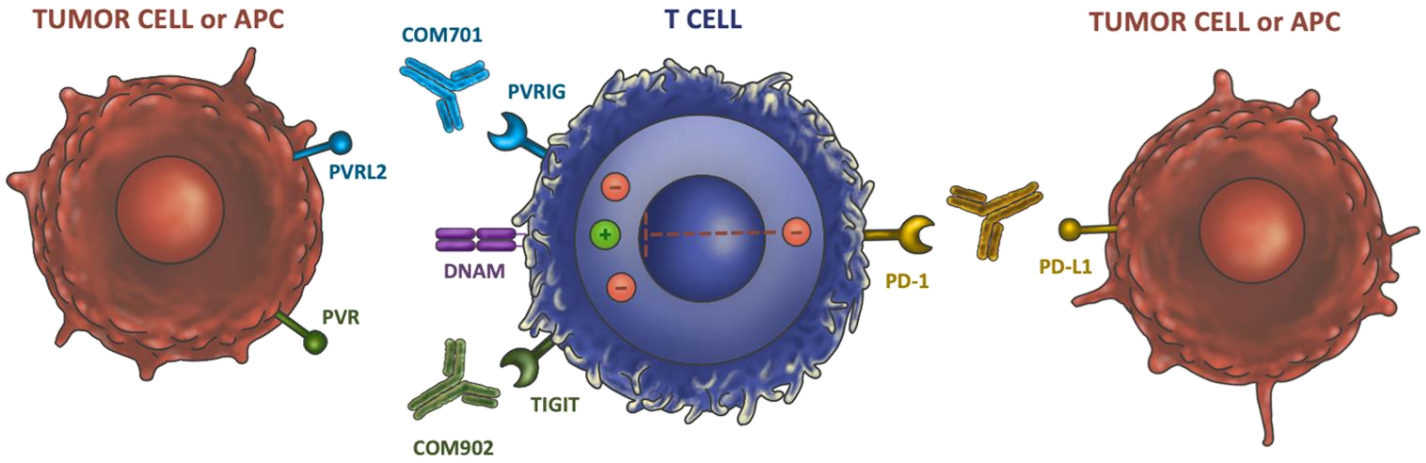
Edited by Wayne M. Yokoyama, Washington University School of Medicine, St. Louis, MO, and approved September 1, 2009 (received for review March 30, 2009)

PVRIG and TIGIT Functional Gene Structure Matches Known Immune Checkpoint Receptors

compugen
FROM CODE TO CURE®

DNAM-1 Axis Potential to be a Game Changer in the Fight Against Cancer

PVRIG may be the missing piece when current checkpoint inhibitors fail

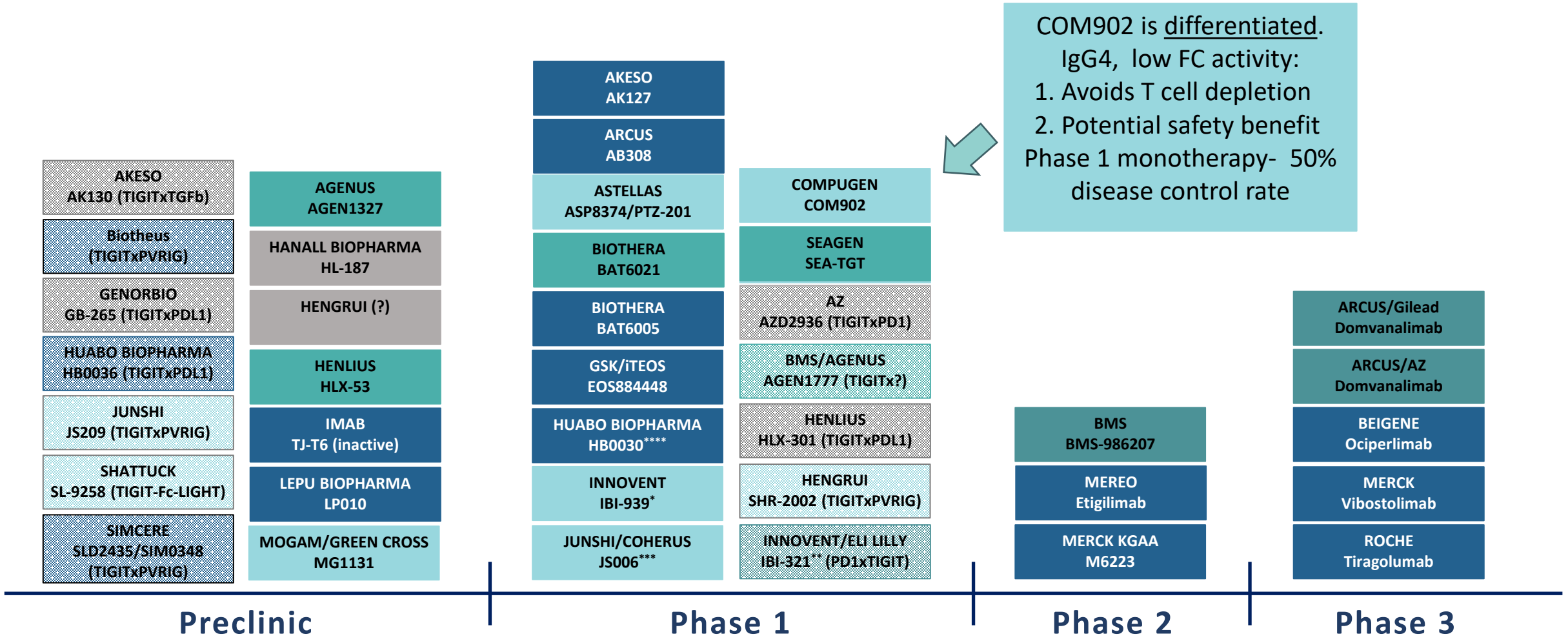


Support combination approach to overcome immunotherapy resistance

- 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
- PVRL2 broadly expressed in PD-L1 high and low tumors

compugen
FROM CODE TO CURE®

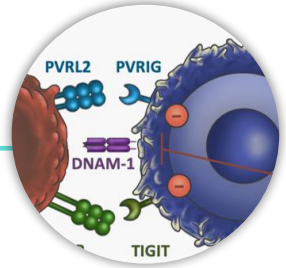
TIGIT: Next Generation IO Target with Extensive Industry Interest



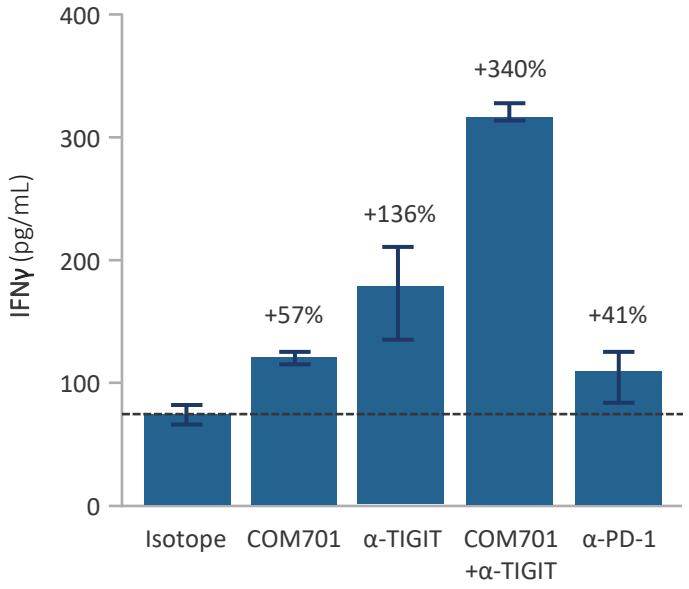
compugen
FROM CODE TO CURE®

COM701(PVRIG inhibitor): Synergistic T cell Activation

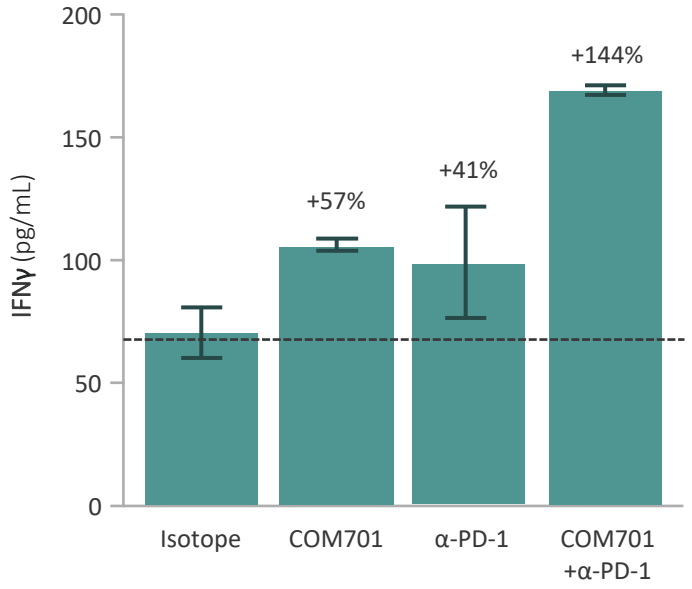
PD-1 or TIGIT inhibitors



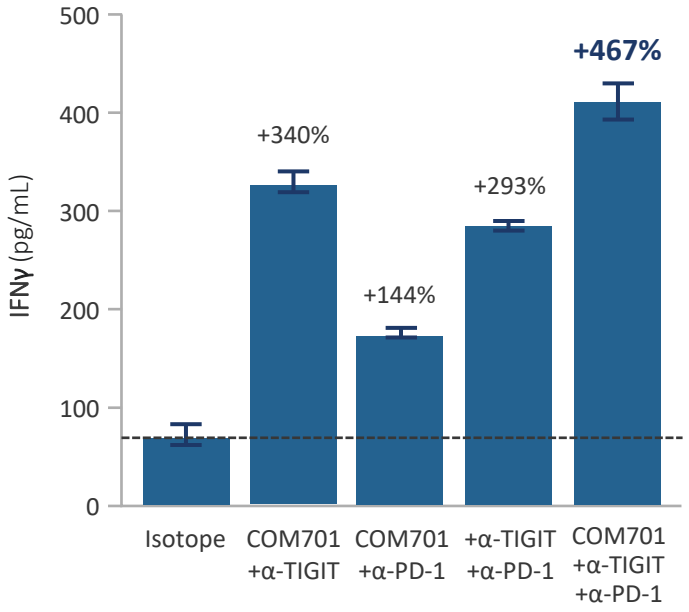
COM701 +/- anti-TIGIT



COM701 +/- anti-PD-1



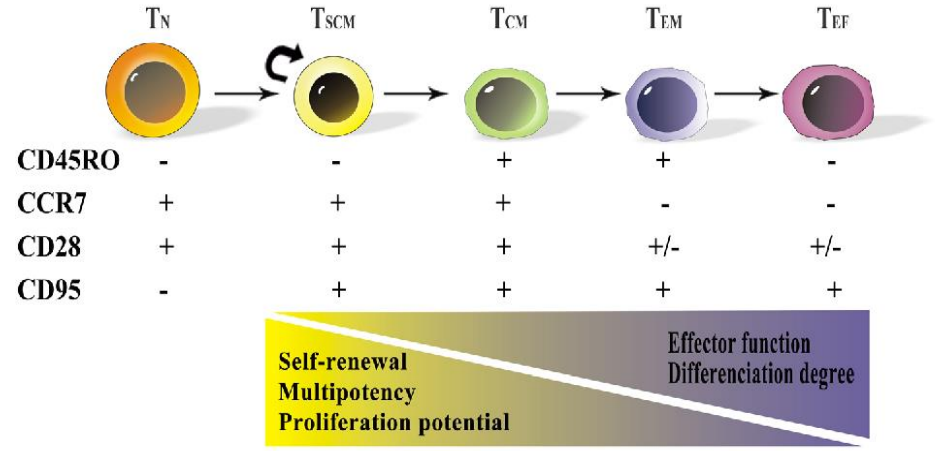
Triple combination



Whelan, et al., Cancer Immunol Res. 2019

compugen
FROM CODE TO CURE®

Early Differentiated T stem-like cells (Tscm)are Potent Inducers of Anti-Tumor Activity Following Immunotherapy



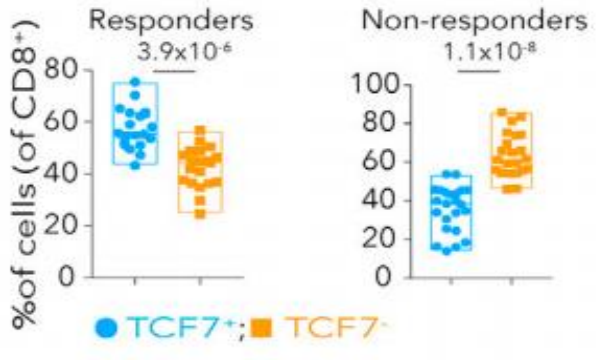
Xu et al., 2015, J. of Hem and Onc.

Stem-like CD8 T cells mediate response of adoptive cell immunotherapy against human cancer

Sri Krishna[1]*, Frank J. Lowery[1]*, Amy R. Copeland[1], Erol Bahadiroglu[2], Ratnadeep Mukherjee[2], Li Jia[3], James T. Anibal[2], Abraham Sachs[1], Serifat O. Adebola[2], Devikala Gurusamy[1], Zhiya Yu[1], Victoria Hill[1], Jared J. Gartner[1], Yong F. Li[1], Maria Parkhurst[1], Biman Paria[1], Pia Kvistborg[4], Michael C. Kelly[5], Stephanie L. Goff[1], Grégoire Altan-Bonnet[2], Paul F. Robbins[1]†, Steven A. Rosenberg[1]†

Krishna et al., 2020, Science

Fraction of Tscm (TCF7$^+$) cells is a predictive of PD-1 response in melanoma



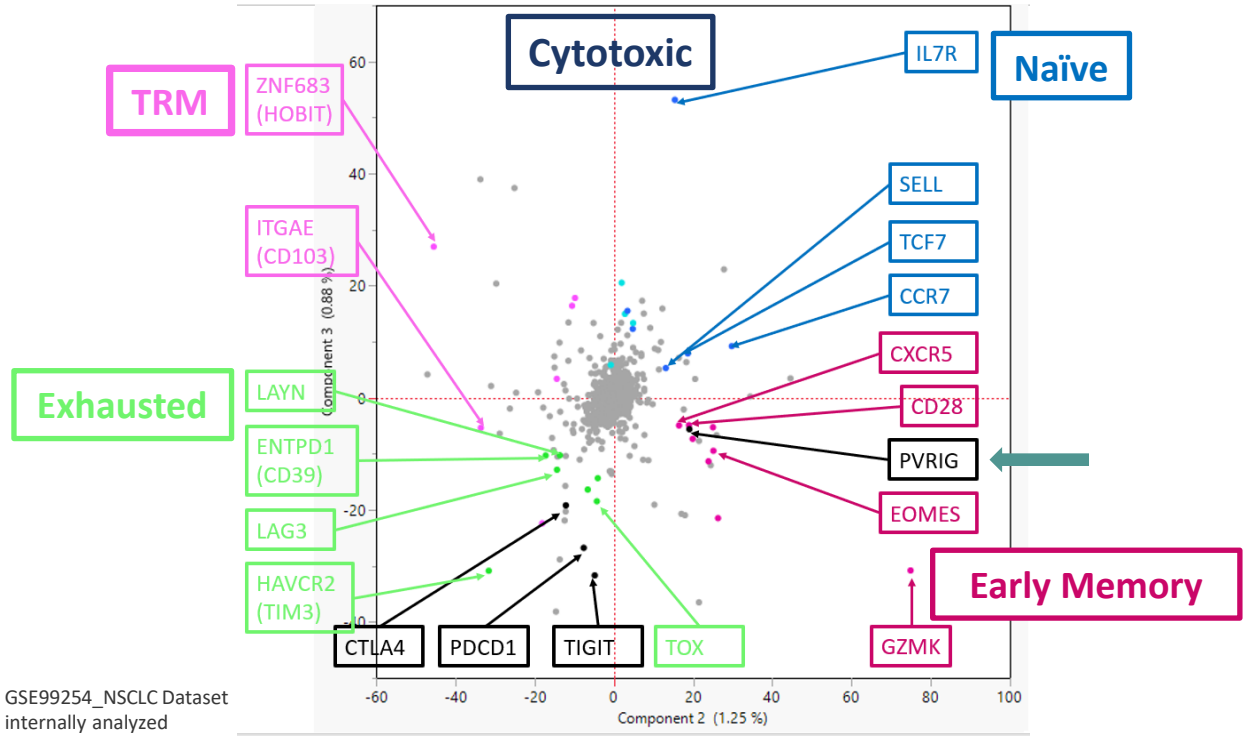
Sadeh-Feldman et al., 2018, Cell

compugen
FROM CODE TO CURE®

PVRIG Uniquely Clusters with Early Memory Tscm

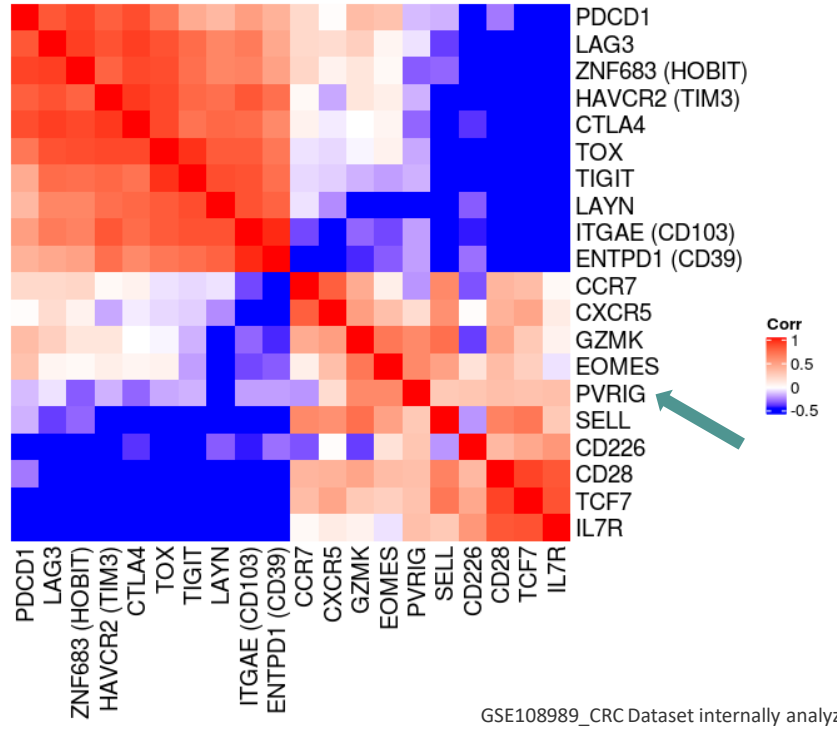
Potential for optimal Tscm activation, expansion and increased effector T cells in TME

PCA Analysis of CD8+ T cell genes, NSCLC



GSE99254_NSCLC Dataset internally analyzed

Unsupervised correlation analysis of scRNA, CRC

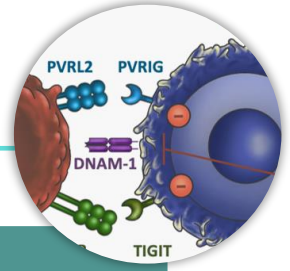


GSE108989_CRC Dataset internally analyzed

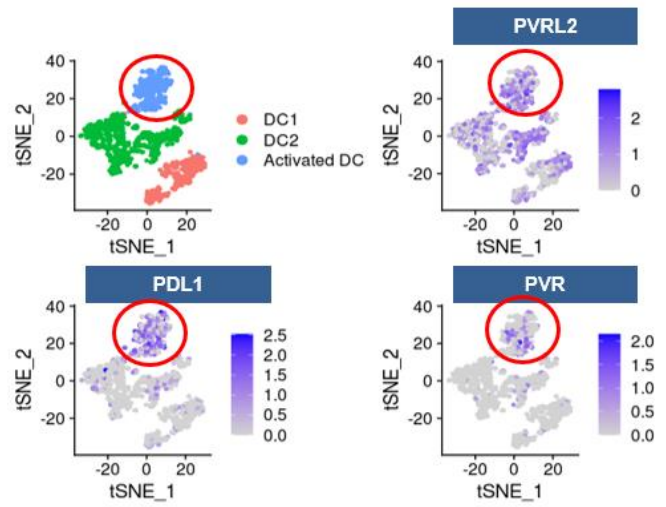
Alteber et al, SITC November 2021 Poster Presentation, modified

compugen
FROM CODE TO CURE®

PVRL2 Has a Dominant Expression on Dendritic Cells

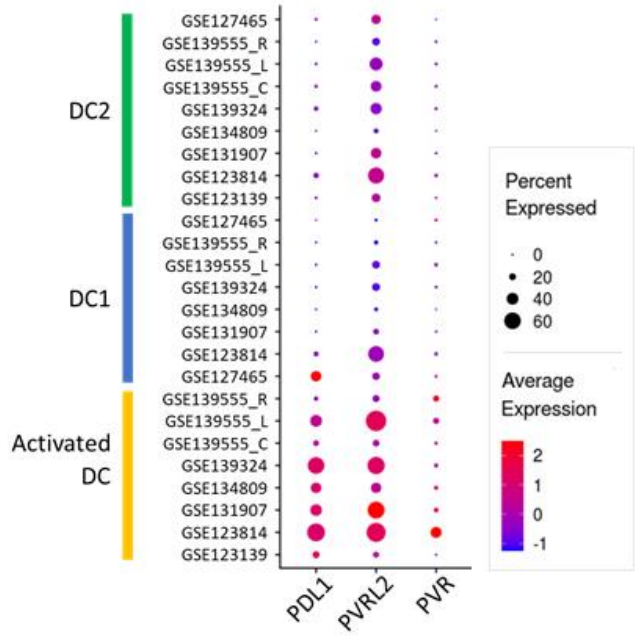


DC Population in SCC/BCC

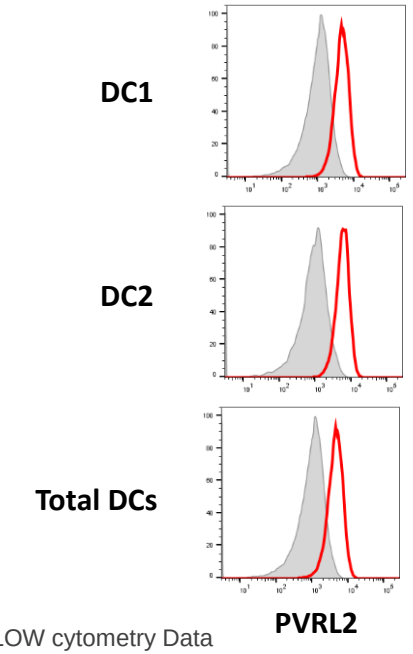


GSE123814 Dataset internally analyzed

Multiple scRNA cancer datasets



Ovarian cancer

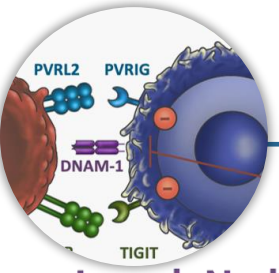


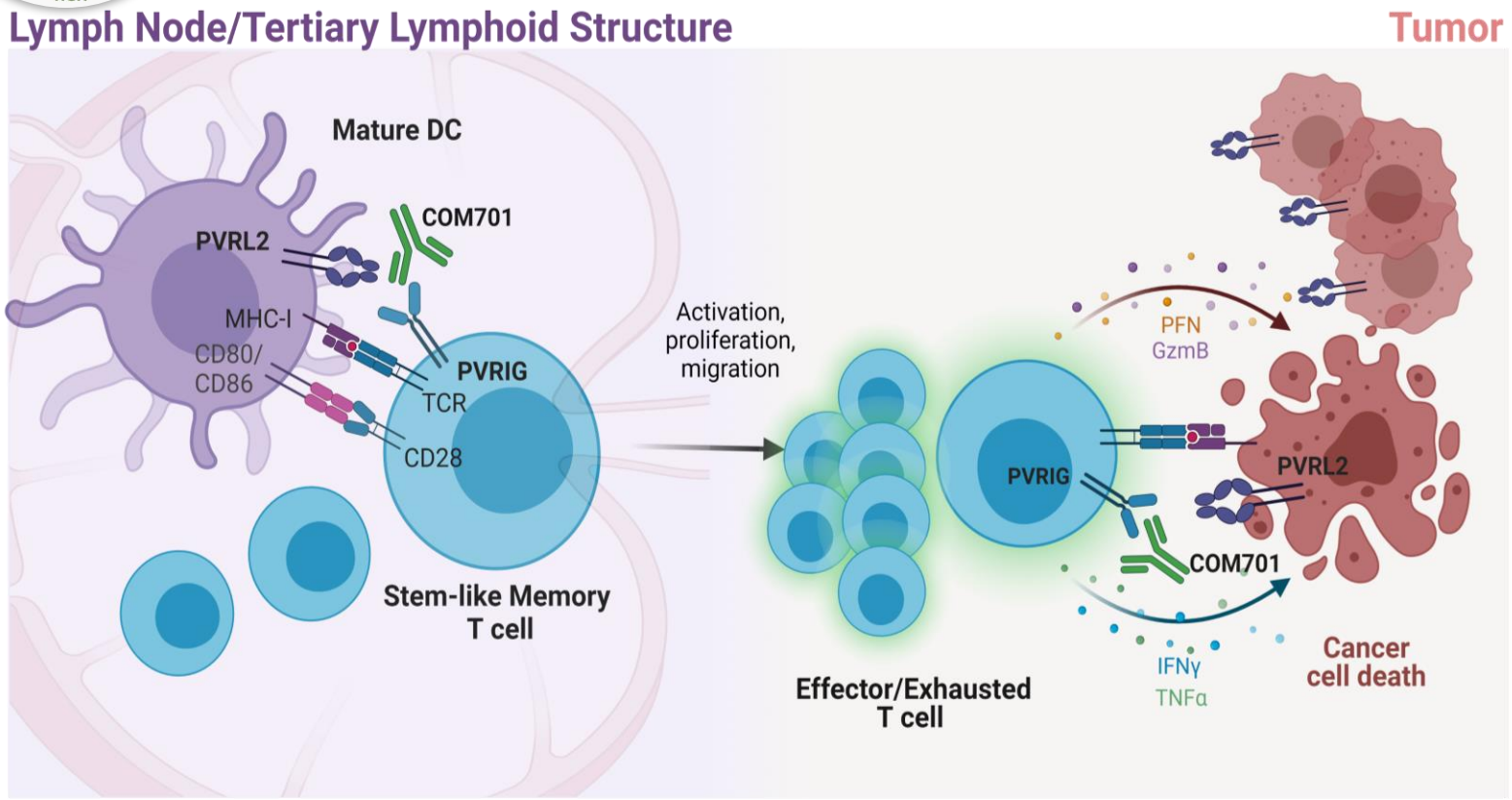
Internal FLOW cytometry Data

PVRIG blockade may enhance interaction and activation of Tscm by DCs

compugen
FROM CODE TO CURE®

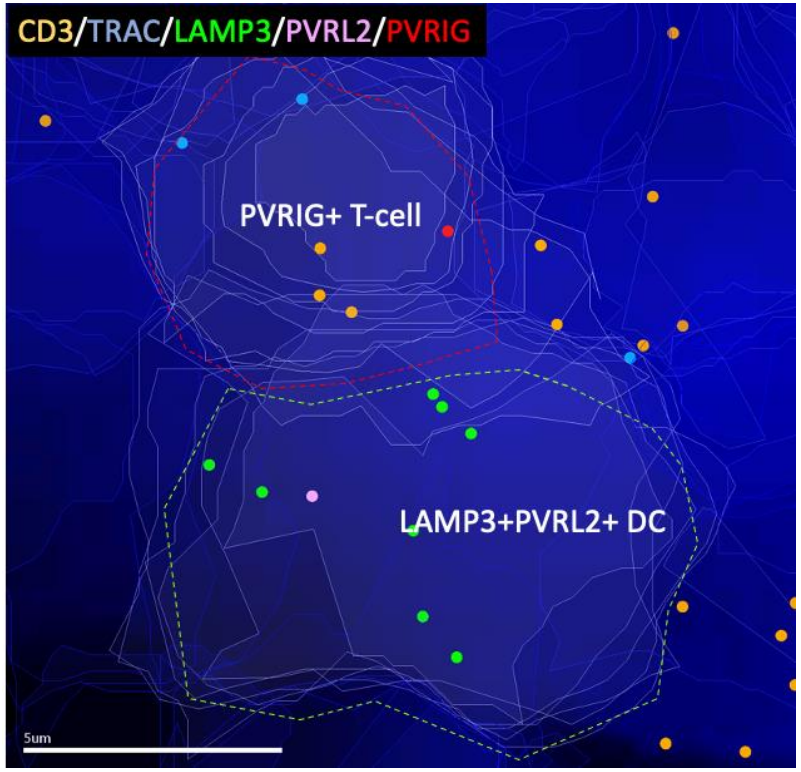
PVRIG+ Stem-like Memory T cells (Tscm) Interaction with PVRL2+ DCs Hypothesis





SITC, Nov 2021, Alteber et al.

In-situ MERFISH analysis of tertiary lymphoid structure in tumor of CRC patient



Granit et al. Keystone Mar 2022, oral presentation; Vizgen

This hypothesis may support PVRIG activity in less inflamed PDL1^{low} tumor types

compugen
FROM CODE TO CURE®

COM701 Clinical Programs – Focus on less Inflamed Indications, Less Responsive to Current Treatments

Phase 1 Arm A – Monotherapy	Identifier: NCT03667716	Phase 1 Arm B – Dual Combination with nivolumab	Identifier: NCT03667716
Monotherapy Dose Escalation	Monotherapy Cohort Expansion (20 patients; progressed on SOC)	Dual Combination: Escalating doses of COM701 with fixed dose of nivolumab	Dual Combination Cohort Expansion (progressed on SOC)
All-comers (progressed on SOC)	Ovarian, Breast, Endometrial and CRC (MSS), NSCLC	All-comers (progressed on SOC)	Ovarian, Breast, Endometrial and CRC (MSS)
Enrollment completed; data presented at AACR '20 and ASCO June '21	Enrollment completed; data presented at ASCO June '21	Initial data presented at AACR '20; updated data presented at ASCO June '21	First patient dosed Q2 '21 N=20 per arm

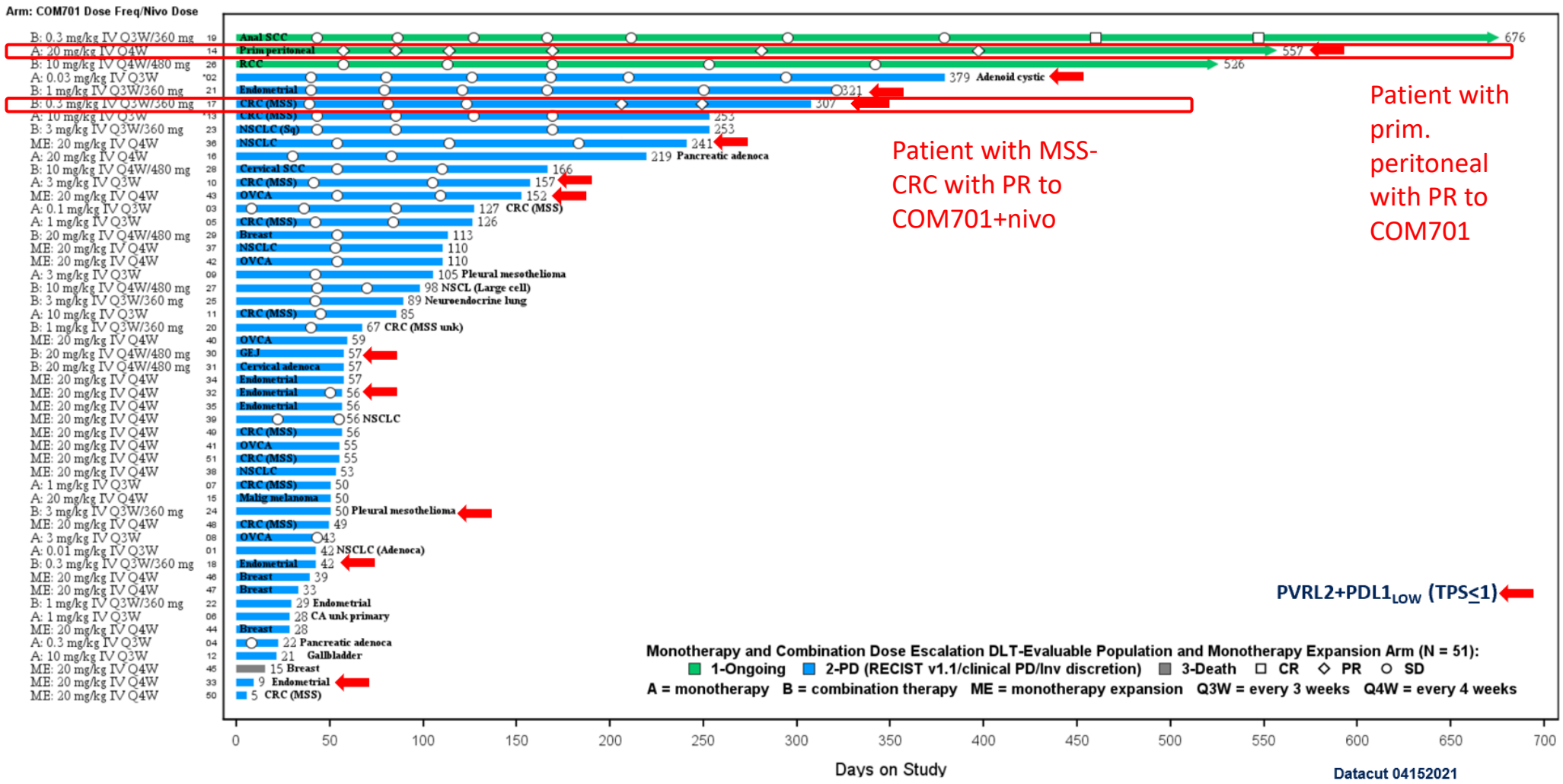
Phase 1/2– Triple Combination	Identifier: NCT04570839	Phase 1 – Combination with COM902	Identifier: NCT04354246
Triple Combination Dose Escalation Escalating doses of COM701 with fixed doses of nivolumab + BMS-986207	Triple Combination Cohort expansion	Dual Combination Evaluation for Safety/Tolerability COM902 + COM701 (both at RDFE)	Dual Combination Cohort Expansion COM902 + COM701
All-comers (progressed on SOC) Data presented at SITC Nov 2021	Ovarian, Endometrial, HNSCC, additional tumor types with high PVRL2 expression First patient dosed Q3 '21 N=20 per arm	All-comers (progressed on SOC) First patient dosed Q3 '21	HNSCC, NSCLC, CRC (MSS) First patient dosed Q4 '21 N=20 per arm

Study Objectives	Safety & Tolerability, PK/PD, Preliminary anti-tumor activity

RDFE: Recommended dose for expansion
HNSCC: Head and neck squamous cell cancer; 2 cohorts: IO-naïve cohort and cohort with prior IO therapy

compugen
FROM CODE TO CURE®

COM701 Monotherapy and Nivolumab Combination Therapy: Swimmer Plot

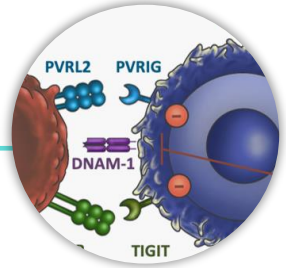


ASCO, June 2021, Vaena et al., Oral presentation

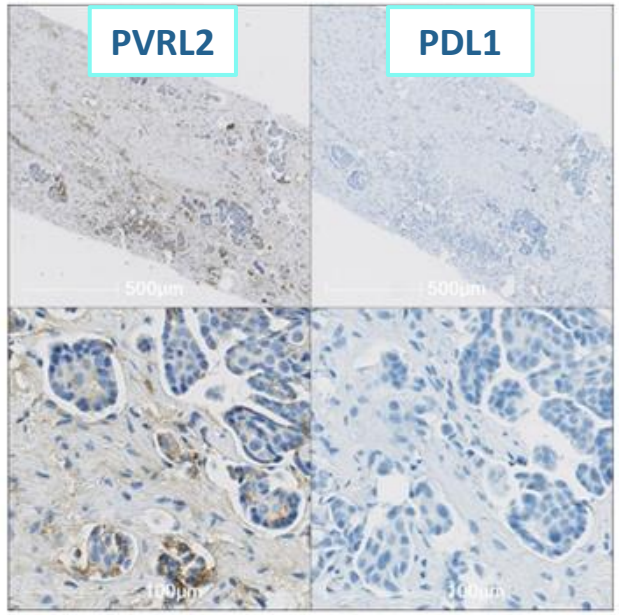
Preliminary anti-tumor activity also in patients with PVRL2^{+}PDL1^{low} tumors

compugen
FROM CODE TO CURE®

Confirmed PR in Patient with Primary Peritoneal PD-L1^{neg} Cancer Treated with COM701 Monotherapy

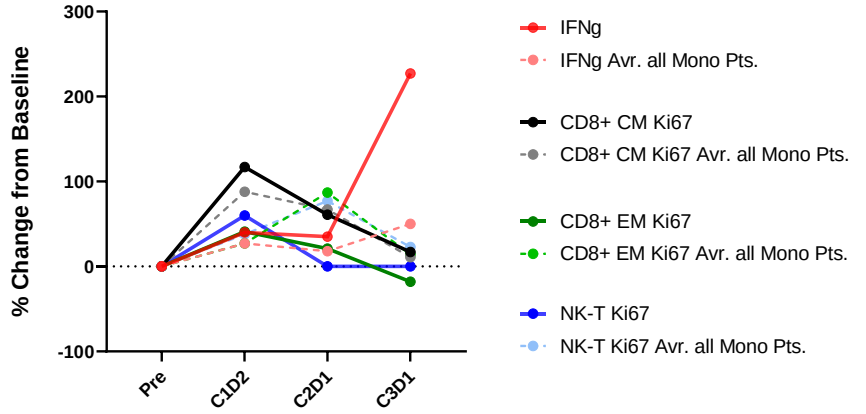


Patient received 3 prior lines of anti cancer therapy



- Pre-treatment Archival biopsy (>1 year)
- Negative PD-L1 staining
- PVRL2 expression found on tumor and endothelial cells
- Immune "desert": no immune cells detected in biopsy

Increase in IFNγ induction and immune activation in peripheral blood

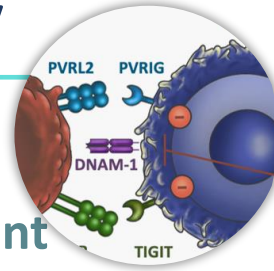


ASCO, June 2021, Vaena et al., Oral presentation

PR in patient with non-inflamed TME demonstrating immune activation in peripheral blood following COM701 monotherapy

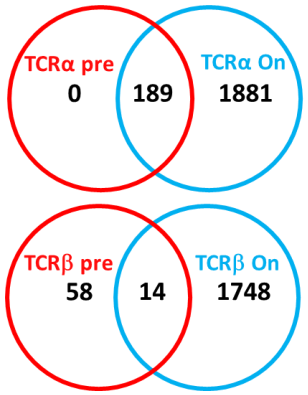
compugen
FROM CODE TO CURE®

Increased TME Immune Activation and TCR Clonality in Patient with CRC (MSS) with PR to COM701+Nivolumab Combination Therapy

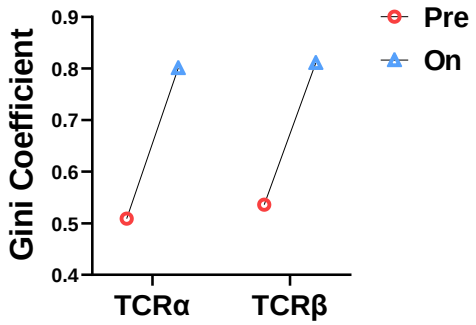


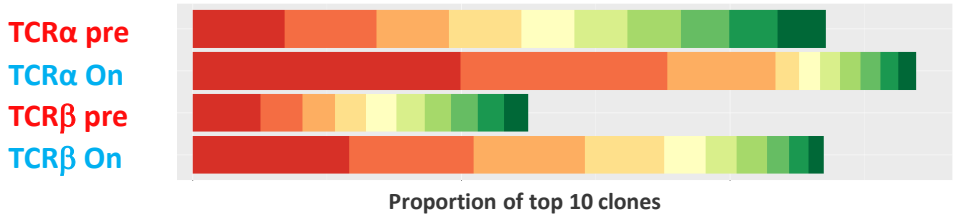
Patient with PVRL2^{+} (H-score=25) PDL1^{low} (1% TPS) Tumor
4 prior lines of chemotherapy; Best response of PD to anticancer therapy prior to study enrollment

Induced number of clones

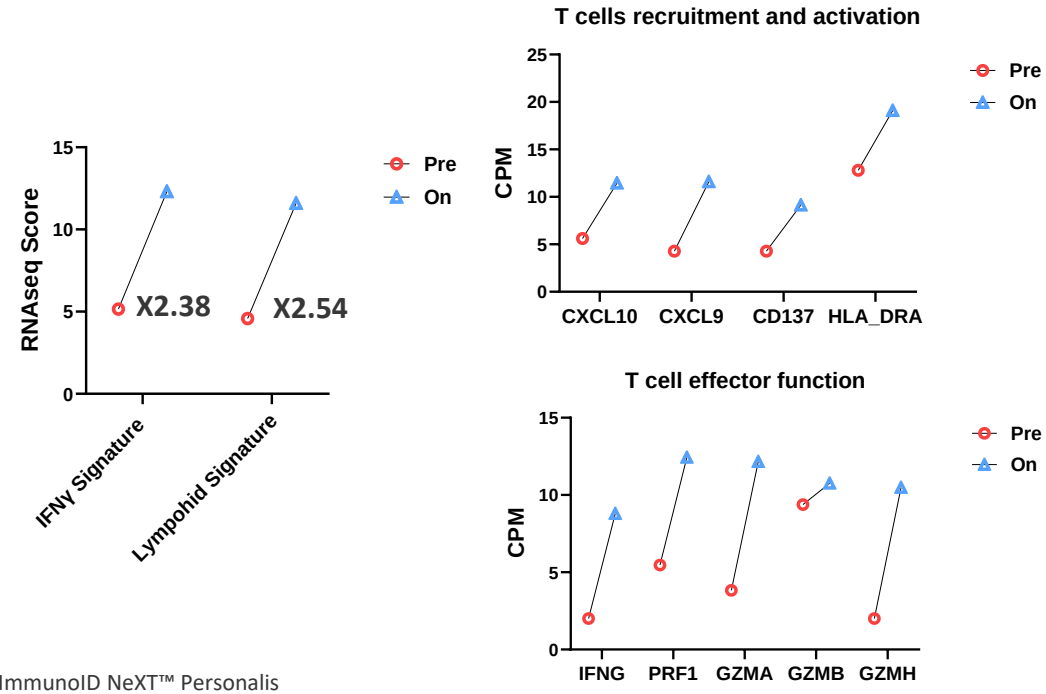


Increased clonal expansion





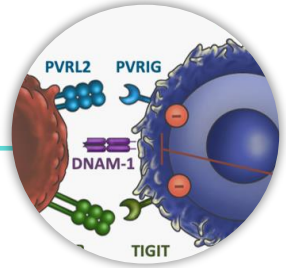
Increased Immune infiltration and activation



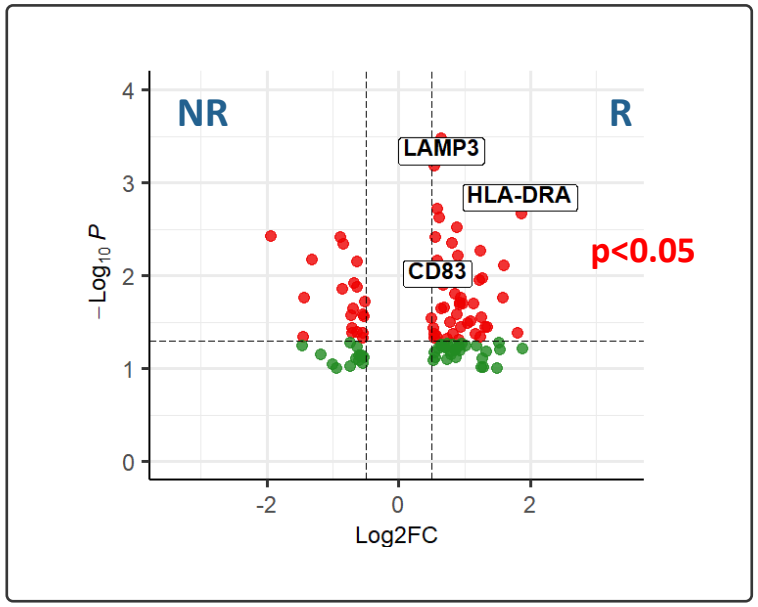
ImmunoID NeXT™ Personalis

compugen
FROM CODE TO CURE®

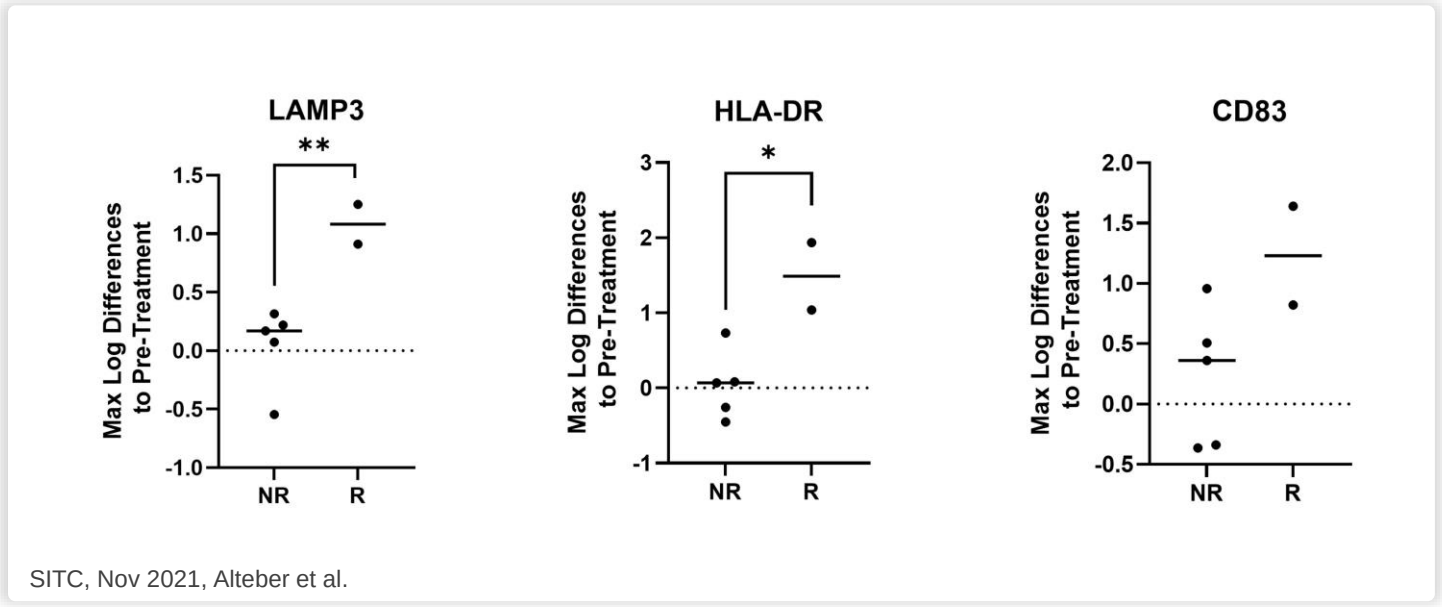
Combination of COM701+Nivolumab Induced Markers of Activated Dendritic Cells (DCs) in Serum of 2 Responding Patients



Responders (R) vs non-responders (NR) differential gene expression



Olink® Explore 1536



SITC, Nov 2021, Alteber et al.

Induction of activated-DC markers in serum of 2 patients that clinically responded to COM701+nivolumab, compared to non-responders

compugen
FROM CODE TO CURE®

Summary

- Co-blockade PVRIG and TIGIT checkpoints , discovered computationally by Compugen, synergize with PD-1 blockade pre-clinically to drive anti-tumor immunity
- PVRIG, a novel checkpoint in the DNAM-1 axis, has a unique dominant expression on early differentiated stem-like memory T cells (Tscm)
- PVRIG blockade may lead to increased T cell expansion and infiltration into less ‘inflamed’ tumors
- Preliminary data shows that COM701 (anti-PVRIG) increase infiltration and activation of T cells in TME and induce signs of anti-tumor activity in patients with $PVRL2^{+}PD\text{-}L1^{low}$ tumors
- Dual (PVRIG & TIGIT or PVRIG & PD-1) and triple blockade (PVRIG & TIGIT & PD-1) clinical trials are ongoing

compugen
FROM CODE TO CURE®

Thank You