Corporate Overview

Jefferies 2017 Global Healthcare Conference
June 6, 2017
SAFE HARBOR STATEMENT

This presentation contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by the use of terminology such as “will,” “may,” “expects,” “anticipates,” “believes,” “potential,” and “intends,” and describe opinions about possible future events. 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. Among these risks: 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. Moreover, the development and commercialization of therapeutic candidates involve many inherent risks, including failure to progress to clinical trials or, if they progress to or enter clinical trials, failure to receive regulatory approval. These and other factors 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 as well as other documents that may be subsequently filed by Compugen from time to time with the Securities and Exchange Commission. 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. All intellectual property, including trade marks, trade names, slogan, logos, service marks, patents, copyrights or trade secret displayed in this Presentation, including the name Compugen, are registered and unregistered intellectual property rights of Compugen.
Our Vision

Transforming patient lives by developing first-in-class therapeutics based on computational predictive discovery of novel targets
COMPUGEN: FROM CODE TO CURE™

**Pioneering**
predictive drug discovery

**Discovering**
novel drug targets

**Building**
broad early-stage immuno-oncology pipeline

**Focusing**
next wave of immuno-oncology drug targets for cancer immunotherapy

**Developing**
first-in-class biologics
first internal program in IND-enabling studies

**Collaborating**
first-in-class biologics at various development stages under revenue sharing agreements
TWO CENTERS OF EXCELLENCE

Compugen USA, Inc.
- Therapeutic mAb Research & Development
  - South San Francisco, USA

Compugen Ltd.
- Headquarters
  - Holon, Israel
- Predictive Discovery & Target Validation
COMPUGEN: FOUR PROGRAM AREAS

COM701
Anti-PVRIG drug candidate for cancer immunotherapy

Myeloid Targets
Complementary portfolio to T cell checkpoint programs for cancer immunotherapy

COM902
Anti-TIGIT drug candidate for cancer immunotherapy

CGEN-15001
Fc fusion protein drug candidate for autoimmune diseases therapy
KEY STRATEGIC ADVISORS
Industry Veterans, Renowned Oncologists and Immunologists

SCIENTIFIC ADVISORY BOARD

- **Drew Pardoll, MD PhD**
  Chairman of the SAB
  - Johns Hopkins University

- **Antoni Ribas, MD PhD**
  - UCLA

- **Charles Drake, MD PhD**
  - Columbia University Medical Center

- **Iain McInnes, MD PhD**
  - University of Glasgow

- **Miriam Merad, MD PhD**
  - Mount Sinai

- **Howard Soule, PhD**
  - Prostate Cancer Foundation of Australia

STRATEGIC ADVISORS

- **Elliott Sigal, MD PhD**
  Former CSO, EVP and Director
  - Bristol-Myers Squibb

- **Steven Holtzman**
  Former CBO and CEO
  - Millennium

- **Richard Haiduck**
  Former CBO and CEO
  - Life science companies
THE IMMUNO-ONCOLOGY MARKET IS RAPIDLY GROWING

- Checkpoint inhibitor sales forecasted to exceed $35B by 2022
- Projected to be the biggest drug class in the industry
- Checkpoint inhibitors expected to be the backbone of all cancer treatments

![PD-1/PD-L1 Sales Estimates](chart.png)
DESPITE BROAD RESPONSES ONLY A SUBSET OF PATIENTS RESPOND TO ANTI PD-1/L1 TREATMENT

Significant opportunity to treat non-responders to PD-1/L1 checkpoint inhibitors
TARGETING IMMUNE CHECKPOINTS TODAY:
FIERCE COMPETITION AGAINST SAME TARGETS

Tumor/APC

T cell
FROM GENOMIC CODE TO CLINICAL CURE
An Integrated Approach

PREDICTIVE DISCOVERY

PIPELINE PROGRAM

STRATEGIC PARTNERSHIPS
COMPUGEN’S PIPELINE PROGRAM
From Code to Cure

<table>
<thead>
<tr>
<th>Target discovery</th>
<th>Target validation</th>
<th>mAb discovery</th>
<th>Screening/lead selection</th>
<th>Cell line development</th>
<th>CMC/IND enabling</th>
<th>IND Filing</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM701 / PVRIG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM902 / TIGIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-XXXX (Myeloid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undisclosed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15001T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From computer prediction to preclinical POC
PVRIG BLOCKADE IS DIFFERENT FROM AND SYNERGISTIC WITH TIGIT BLOCKADE

• Separate inhibitory pathways
• Different temporal and spatial distribution of targets and ligands

Martinet & Smyth, 2015 (modified)
MATCHING PREDICTION TO FUNCTION: PVRIG
OVEREXPRESSION INHIBITS T CELL ACTIVATION

Cohen and Safyon, Bar Ilan Univ.
PVRIG IS EXPRESSED ON CD8⁺ T CELLS AND NK CELLS IN THE TUMOR MICROENVIRONMENT

PVRIG expression in effector TILs

Co-expression with TIGIT and PD-1 on CD8⁺ TILs

<table>
<thead>
<tr>
<th>CD8+ T</th>
<th>CD56+ NK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung Cancer</td>
<td>Lung Cancer</td>
</tr>
<tr>
<td>Renal Cancer</td>
<td>Renal Cancer</td>
</tr>
</tbody>
</table>

- isotype
- PVRIG

Lung Cancer

- TIGIT
- PD1
- PVRIG

Renal Cancer

- TIGIT
- PD1
- PVRIG

- isotype
- PVRIG
PVRIG & ITS LIGAND PVRL2 ARE CO-EXPRESSED IN MULTIPLE TUMOR TYPES

Relevance in multiple tumor types

PVRL2 (Monocytes)
COM701: LEAD CHECKPOINT INHIBITOR
From computer prediction to functional activity in preclinical models

- COM701 is a high affinity monoclonal antibody targeting PVRIG
  - PVRIG (CGEN-15029) identified as novel immune checkpoint by Compugen and plays a unique role in the validated TIGIT axis
- COM701 is synergistic with anti-TIGIT and anti-PD-1/L1 as a potential cancer immunotherapy treatment
- First-in-class opportunities as mono- and combination therapies

IND-ENABLING STUDIES
**COM701 ENHANCES TIL ACTIVATION**

- gp100 pulsed CHO-HLA-A2

  - IFN-γ (pg/mL) + 37%
  - IFN-γ (pg/mL) + 40%

- MART-1/624-mel

  - IFN-γ (pg/mL) + 28%
  - IFN-γ (pg/mL) + 20%

- gp100/MART-1 specific TILs

  - 624-mel or peptide-pulsed CHO-HLA-A2
PVRIG KNOCKOUT REDUCES TUMOR GROWTH AND SUPPORTS MONOTHERAPY APPROACH

Tumor growth in PVRIG\(^{-/-}\) mice

Ganguly and Pardoll, Johns Hopkins Univ. MC38 model
PVRIG KNOCKOUT AND ANTI-PD-L1 COMBINES IN PRODUCING TUMOR GROWTH REDUCTION

WT = wild type  
KO = knockout

WT = wild type IgG2b  
KO = knockout IgG2b  
WT IgG2b  
KO IgG2b  
WT anti-PDL1  
KO anti-PDL1

Ganguly and Pardoll, Johns Hopkins Univ. MC38 model
Blocking PVRIG in combination with anti-PDL-1 reduces tumor growth and increases of survival.

CT26 syngeneic model

**p = 0.0005; TGI=56%**

**p = 0.044; TF=4/10**
DUAL INHIBITION OF TIGIT AND PVRIG REMOVES BOTH BRAKES IN THE DNAM-1 CO-STIMULATORY PATHWAY

TIGIT Blockade

Dual PVRIG/TIGIT Blockade

PVRIG Blockade

Increased anti-tumor T cell reactivity
COMBINING PVRIG AND TIGIT BLOCKADE INCREASES TIL ACTIVATION
### IMMUNO-ONCOLOGY THERAPEUTIC PIPELINE:
**COM902 / TIGIT (CGEN-15137)**

<table>
<thead>
<tr>
<th>Target discovery</th>
<th>Target validation</th>
<th>mAb discovery</th>
<th>Screening/lead selection</th>
<th>Cell line development</th>
<th>CMC/IND enabling</th>
<th>IND Filing</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM701 / PVRIG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM902 / TIGIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-XXXX (Myeloid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undisclosed</td>
<td>Multiple programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15001T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Internal IO**
- **Partnered IO (Bayer)**
- **Lead selection**
COM902 COMBINATION WITH COM701

- TIGIT identified as a putative immune checkpoint by Compugen’s predictive discovery platform in 2009 (N. Stanietzky et al PNAS 2009)
- Combination of COM701 and COM902 antibodies provide potential unique clinical differentiation
- In vitro effects of TIGIT/PVRIG blockade equal or exceed those seen with PD-1 combinations

COM902 LEAD SELECTION COMPLETED Q1 2017; PRECLINICAL DEVELOPMENT INITIATED
TIGIT KNOCKOUT AND PVRIG BLOCKADE SYNERGIZE IN PRODUCING TUMOR GROWTH REDUCTION

Tumor growth; B16 model

* p < 0.05 ANOVA

<table>
<thead>
<tr>
<th>TGI compared to WT + mlgG1</th>
<th>Day 11</th>
<th>Day 14</th>
<th>Day 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT + aPVRIG</td>
<td>17%</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>TIGIT-KO + mlgG1</td>
<td>17%</td>
<td>17%</td>
<td>13%</td>
</tr>
<tr>
<td>TIGIT-KO + aPVRIG</td>
<td>63%</td>
<td>53%</td>
<td>49%</td>
</tr>
</tbody>
</table>
INTERPLAY OF THE PD-1 AND TIGIT/PVRIG PATHWAYS SUPPORTING DUAL AND TRIPLE BLOCKADE

PD-1 activation can result in DNAM-1 dephosphorylation
POTENCY OF ANTI-PVRIG AND ANTI-TIGIT COMBINATIONS EQUALS OR EXCEEDS PD-1 ANTIBODY COMBINATIONS

Panc.05.04 (PDL1^{hi})

Colo205 (PDL1^{lo})
# IMMUNO-ONCOLOGY THERAPEUTIC PIPELINE: CGEN-XXXX (MYELOID)

<table>
<thead>
<tr>
<th></th>
<th>Target discovery</th>
<th>Target validation</th>
<th>mAb discovery</th>
<th>Screening/lead selection</th>
<th>Cell line development</th>
<th>CMC/IND enabling</th>
<th>IND Filing</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM701 / PVRIG</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM902 / TIGIT</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-XXXX (Myeloid)</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undisclosed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15001T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Internal IO**: Blue
- **Partnered IO (Bayer)**: Green
- **Lead selection**: Yellow

*Indicates ongoing or active programs.*

---

**IMMUNO-ONCOLOGY THERAPEUTIC PIPELINE**

- **CGEN-XXXX (Myeloid)**: Ongoing programs include:
  - Target discovery
  - Target validation
  - mAb discovery
  - Screening/lead selection
  - Cell line development
  - CMC/IND enabling
  - IND Filing

**Partnered Programs** (Bayer):
- CGEN-15001T

---

**Key Activities**:
- **Lead selection**: Yellow diamond indicates lead selection activities.
- **Multiple programs**: Indicates multiple programs within a single category.
BUILDING THE COMPUGEN IO PIPELINE: ADDING MULTIPLE MECHANISMS TO BROADLY ADDRESS CANCER TREATMENT

Discover and address various immune suppressive components in the TME
## IMMUNO-ONCOLOGY THERAPEUTIC PIPELINE: BAYER PROGRAMS

<table>
<thead>
<tr>
<th></th>
<th>Target discovery</th>
<th>Target validation</th>
<th>mAb discovery</th>
<th>Screening/ lead selection</th>
<th>Cell line development</th>
<th>CMC/IND enabling</th>
<th>IND Filing</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM701 / PVRIG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM902 / TIGIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-XXXX (Myeloid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undisclosed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15001T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Internal IO**
- **Partnered IO (Bayer)**
- **Lead selection**
BAYER CANCER IMMUNOTHERAPY PARTNERSHIP
New Targets for Anti-Tumor Immunity

CGEN-15001T & CGEN-15022: TWO NOVEL IMMUNE CHECKPOINTS

CGEN-15001T antibody program

*From computer prediction to functional activity in preclinical models*

- Transferred to full control of Bayer following achievement of 3 milestones
- Preclinical development on track
- Pivotal (GLP) toxicity studies ongoing
- GMP clinical trial material production ongoing

CGEN-15022 antibody program

- Joint preclinical research stage
- Novel mechanism of action
- Assessment of its role in anti-cancer immune responses
To date achieved all 3 preclinical milestones for CGEN-15001T and first milestone for CGEN-15022 totaling $15.4M

AUG 2013 Collaboration and license agreement

- $10M upfront payment
- Up to $30M Preclinical milestone payments
- Over $500M in potential milestone payments
- Royalties on global net sales: Mid-to-high single digit
## COMPUGEN’S PIPELINE PROGRAM:
### CGEN-15001 AUTOIMMUNE FC-FUSION PROGRAM

<table>
<thead>
<tr>
<th>Target discovery</th>
<th>Target validation</th>
<th>mAb discovery</th>
<th>Screening/ lead selection</th>
<th>Cell line development</th>
<th>CMC/IND enabling</th>
<th>IND Filing</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM701 / PVRIG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM902 / TIGIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-XXXX (Myeloid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undisclosed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15001T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGEN-15022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CGEN-15001**

- Internal IO
- Partnered IO (Bayer)
- Lead selection
- Autoimmune
Product-oriented collaborations at various development stages

- Four program areas; belief that at least one new industry partnership is achievable by the end of the year

Advancing internal programs to the clinic

- COM701 in IND-enabling studies; expected to enter the clinic next year
- COM902 in preclinical development, advancing toward the clinic
- Multiple myeloid & immune checkpoint programs from research to preclinical stages

Continuing progress on Bayer collaboration

- Progress in Bayer’s pipeline

Development milestones in collaborations – existing and future
Cash Balance

$54.5 million
(March 31, 2017)
No Debt

Gross Cash Expenditures*

~$8 million/quarter
2017 quarterly forecast

Market Capitalization

~$250 million (June 2017)

NASDAQ (CGEN);
NBI (Nasdaq Biotech Index)

TASE (CGEN.TA)
TA-75, TA-Biomed, TA BlueTech,
TA Tech-Elite

* Does not include cash receipts from any source.
Corporate Overview

Jefferies 2017 Global Healthcare Conference
June 6, 2017