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,” “plan,” “goal,” “estimate,” “likely,” “should,” 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. Compugen also may not meet expected milestones in its development pipeline. Moreover, the development and commercialization of therapeutic candidates involve many inherent risks, including failure or delay to progress to clinical trials or, if they progress to or enter clinical trials, failure to advance through clinical development or receive regulatory approval. 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 subsidiaries, registered in the U.S.A., EU member states and Israel.
Our Vision
Transforming patient lives by developing first-in-class therapeutics based on Compugen’s computational target discovery platform
SIGNIFICANT UNMET NEED: 70-80% OF PATIENTS NON-RESPONSIVE TO APPROVED CANCER IMMUNOTHERAPIES

~20-30% Average Response Rate

Our value proposition and differentiated approach:

- New targets aimed towards non-responsive patient populations
- Mechanistic-driven first-in-class combinations
- Robust biomarker strategy to select patients based on pathway expression profile

COMPUGEN IS TARGETING NOVEL PATHWAYS TO ADDRESS NON-RESPONSIVE PATIENT POPULATIONS
KEY INVESTMENT HIGHLIGHTS

Innovative Immuno-oncology Portfolio

- First-in-class Phase 1 drug candidates
  - COM701, BAY1905254
- Novel targets to address mechanisms of immune resistance

Strategic Collaborations

- Corporate partners:
  - Bristol-Myers Squibb
  - AstraZeneca
- R&D collaborations:
  - Johns Hopkins, Mount Sinai

Proven Computational Platform

- Proven engine for novel drug targets
- Purpose-built algorithmic analyses
- Integrated immuno-oncology and drug development expertise
DISCOVERY AND PIPELINE STRATEGY: ADDRESSING MULTIPLE MECHANISMS OF IMMUNE RESISTANCE

**INFLAMED**

**Goal:** Address mechanisms of T & NK cell dysfunction

**Approach:** Immune Checkpoint Platform

**Output:** Advanced pipeline – 3 programs in clinical & late preclinical development

**EXCLUDED/SUPPRESSED**

**Goal:** Address immunosuppressive cells in tumor microenvironment

**Approach:** Myeloid Platform

**Output:** Early stage pipeline – multiple programs in preclinical validation

**DESERT/NON-INFLAMED**

**Goal:** Address tumor-intrinsic mechanisms of resistance

**Approach:** Immune Resistance Platform

**Outcome:** Platform in development – new drug targets
# COMPUGEN’S IMMUNO-ONCOLOGY PIPELINE

**From Code to Cure®**

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>PARTNER</th>
<th>DISEASE</th>
<th>DRUG DISCOVERY</th>
<th>PRECLINICAL DEVELOPMENT</th>
<th>PHASE 1</th>
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<tbody>
<tr>
<td>COM701</td>
<td></td>
<td>Expansion to Lung, Breast, Ovarian, Endometrial</td>
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<tr>
<td><strong>anti-PVRIG mAb</strong></td>
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<tr>
<td>COM701 + Opdivo® *</td>
<td>Bristol-Myers Squibb</td>
<td>Expansion to Lung, Breast, Ovarian, Endometrial</td>
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<tr>
<td><strong>anti-PVRIG mAb + anti-PD-1 mAb</strong></td>
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<tr>
<td>BAY 1905254</td>
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<td>Undisclosed</td>
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<tr>
<td><strong>anti-ILDR2 mAb</strong></td>
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<tr>
<td>COM902</td>
<td></td>
<td></td>
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<td></td>
<td>IND planned for 2019</td>
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<tr>
<td><strong>anti-TIGIT mAb</strong></td>
<td></td>
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<tr>
<td>Bi-specific products</td>
<td>AstraZeneca</td>
<td></td>
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<td></td>
<td><strong>UNDISCLOSED</strong></td>
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<tr>
<td>Multiple myeloid programs</td>
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* Collaboration is designed to address potential future combinations, including trials sponsored by Bristol-Myers Squibb to investigate combined inhibition of checkpoint mechanisms, such as PVRiG & TIGIT

- **Green** indicates Compugen-owned programs
- **Blue** indicates Partnered programs
INNOVATIVE IMMUNO-ONCOLOGY PORTFOLIO
COM701: FIRST-IN-CLASS DRUG CANDIDATE FOR NON-RESPONSIVE TUMOR TYPES

• COM701: anti-PVRIG humanized IgG4 mAb
  • PVRIG – novel CGEN-discovered immune checkpoint pathway, part of the DNAM axis
  • PVRIG is broadly expressed in both PD-L1\(^+\) and PD-L1\(^-\) tumors

• Clinical opportunities in tumor types with high unmet need
  • Such as endometrial, ovarian, breast, lung and other solid tumors

• Combination therapy strategy based on deep understanding of DNAM axis
  • Dual and triple combination with TIGIT and PD-1 inhibitors

• Robust biomarker-driven strategy and rationale based on elevated expression of axis members

• Strong IP position
  • Issued/pending patents for COM701 composition of matter, use and combinations
PVRIG IS A NOVEL CHECKPOINT IN THE TIGIT/DNAM AXIS: TWO PARALLEL INHIBITORY PATHWAYS

Martinet & Smyth, 2015 (modified)
PVRIG PATHWAY: A SUGGESTED MECHANISM OF RESISTANCE IN PD-1 INHIBITOR NON-RESPONSIVE TUMORS

THE DNAM AXIS: POTENTIAL MOLECULAR INTERACTIONS OF PD-1 AND TIGIT/PVRIG PATHWAYS SUPPORT COMBINATION THERAPY APPROACH
# COM701 PHASE 1 CLINICAL STUDY
Initiated Sept. 2018; 10 participating sites

## Phase 1a

<table>
<thead>
<tr>
<th>Arm A</th>
<th>Arm B</th>
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<tbody>
<tr>
<td><strong>Monotherapy</strong>&lt;br&gt;Dose escalation</td>
<td><strong>Dual Combination</strong>&lt;br&gt;(Escalating doses of COM701 with fixed dose of Opdivo)</td>
</tr>
<tr>
<td>All comers (progressed on SOC)</td>
<td>All comers</td>
</tr>
<tr>
<td>Complete enrollment in Q3</td>
<td>Enrollment of 1st cohort ongoing</td>
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</table>

## Phase 1b

<table>
<thead>
<tr>
<th>Study objectives</th>
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<tbody>
<tr>
<td>Safety &amp; Tolerability</td>
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<tr>
<td>PK/PD</td>
</tr>
<tr>
<td>Clinical activity - COM701 monotherapy and in combination with Opdivo</td>
</tr>
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<tr>
<th>Biomarker strategy</th>
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<tr>
<td>Expression of DNAM axis members. Additional indications based on biomarker analysis.</td>
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<tr>
<th>Identifier: NCT03667716</th>
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COM902 ANTI-TIGIT PROGRAM DESIGNED TO MAXIMIZE COM701 CLINICAL POTENTIAL

- COM902: Potential best-in-class TIGIT mAb
  - A high-affinity (femtomolar) mAb
  - In vitro activity comparable to or better than the top clinical TIGIT antibodies
- Preclinical data demonstrate parallel PVRIG and TIGIT inhibition enhances tumor growth inhibition
- Combination of COM902 & COM701 offers unique clinical differentiation in tumors that are non-responsive to approved checkpoint inhibitors
- IND filing planned for 2019
MYELOID PROGRAMS – OUR NEXT WAVE OF IMMUNO-ONCOLOGY PROGRAMS

- Multiple programs
- Originated from Myeloid Platform
- Various mechanisms of action
- At various stages of research and development
STRATEGIC COLLABORATIONS
CLINICAL COLLABORATION WITH BRISTOL-MYERS SQUIBB
Clinical Trial Collaboration and Equity Investment, signed October 2018

- Bristol-Myers Squibb to supply Opdivo® for COM701 and Opdivo® combination study
- Framework for expansion to additional combination studies, such as PVRIG and TIGIT blockers
  - Broad assessment of COM701 in patients non-responsive to immunotherapy
  - Potential to accelerate clinical development timelines for COM701
- Compugen retains ownership and commercial rights to COM701
- Bristol-Myers Squibb has right-of-first negotiation during exclusivity period
- $12 million strategic equity investment
DEVELOPMENT & COMMERCIALIZATION AGREEMENT WITH BAYER
Collaboration and License Agreement, signed August 2013

BAY 1905254 – first-in-class drug candidate targeting ILDR2
• ILDR2 – a novel immune checkpoint discovered by Compugen’s computational discovery platform
• Preclinical data demonstrate unique mechanism of action with broad combination potential
• Phase 1 study initiated in September 2018

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

Over $250M in potential future milestone payments
Royalties on global net sales: mid-to-high single digit

* CGEN15001T and CGEN-15022
Development of bi-specific and multi-specific immuno-oncology mAb products

• Based on one pipeline program, may serve as a basis for multiple products
• AstraZeneca responsible for R&D and commercial activities
• Compugen retains all other rights, including to develop as
  • Monotherapy and in combination with other products
  • Bi-specific and multi-specific programs, with the exception of the rights licensed to AstraZeneca

$10M
Upfront payment

Up to $200M
Milestone payments for first product

Milestone payments on each additional product

Tiered royalties on future sales
COMPUTATIONAL DISCOVERY PLATFORM
OUR PREDICTIVE APPROACH TO NOVEL TARGET DISCOVERY
A Multi-Omic Approach Across Multiple Complex Data Sets

Numerous Data Sets
- RNASeq
- Single Cell RNA
- Microarray
- Multi-omics

Expert Curation/Integration
- Curation
- Annotation
- Integration
- Update

Suite of computational tools & purpose-built algorithms

Novel Targets
First-in Class Drug Candidates
Biomarkers

Iterative Process; integrated with immuno-oncology and drug development expertise
## DISCOVERY AND PIPELINE STRATEGY: ADDRESSING MULTIPLE MECHANISMS OF IMMUNE RESISTANCE

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DISCOVERY AND PIPELINE STRATEGY: ADDRESSING MULTIPLE MECHANISMS OF IMMUNE RESISTANCE
FINANCIAL POSITION

Cash Balance

~$38 million
(March 31, 2019)
No Debt

Gross Cash Expenditures*

2019 annual forecast
~$27-29 million

Market Capitalization

~$220 million (May 2019)

NASDAQ (CGEN)
TASE (CGEN.TA)
SME-150, TA-Biomed, TA Global
BlueTech, TA Tech-Elite

*Includes one-time restructuring related costs; excludes cash receipts from any source
2018-2019 – STRONG EXECUTION AND VALUE DRIVERS

Short term – COM701 Phase 1 study

• COM701 Phase 1 study
  • Complete enrollment of monotherapy dose escalation by the end of Q3 2019
  • Complete enrollment of combination dose escalation arms in 2019
  • Initiate enrollment of monotherapy expansion cohorts in 2019
• COM902 IND filing planned in 2019

Long term – pipeline and discovery

• Partnered products
  • Continued BAY 1905254 development
  • AstraZeneca bi-specific product development
• Advancement of next wave of immuno-oncology programs
  • Myeloid programs; various MOAs
• New computational platform
  • Novel targets and pathways to address immune resistance mechanisms
Corporate Overview

Jefferies 2019 Global Healthcare Conference
June 4, 2019, New York

Anat Cohen-Dayag, PhD
President & CEO

www.cgen.com