Celgene: Our Mission and Vision

Celgene is building a preeminent global biopharmaceutical company focused on the discovery, development and commercialization of innovative therapies for patients with cancer, immune-inflammatory disease, and other unmet medical needs.
Innovative Medicines with Unique Value Propositions

**Revlimid®**
- Market leader in multiple myeloma
- Non-transplant NDMM reimbursed in 22 countries; TE Maintenance approved in US & EU
- Used in novel triplet combinations

**Pomalyst®**
- A standard of care in RRMM multiple myeloma
- Approved in 58 countries
- Used in novel triplet combinations

**Otezla®**
- Most successful launch in the psoriasis / psoriatic arthritis category
- Global expansion advanced: approved in 51 countries
- Exploring opportunities across multiple indications

**Abraxane®**
- Global market leading branded therapy for metastatic pancreatic cancer
- Adjuvant pancreatic cancer trial enrollment complete
- Studies underway in Phase III I/O combination trials in NSCLC & triple negative breast cancer

**IDHIFA® (masitinib) Tablets**
- First oral targeted therapy for relapsed / refractory AML with IDH2 mutation
- FDA approved in August 2017
- Approval granted just four years after entering the clinic

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### Internal Research – Thematic Centers and Capabilities

<table>
<thead>
<tr>
<th>Thematic Centers of Excellence</th>
<th>Leadership in Therapeutic Modalities</th>
<th>Informatics &amp; Predictive Sciences</th>
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<tbody>
<tr>
<td>Fully enabled with aligned resources</td>
<td>Agnostic to modality</td>
<td></td>
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<tr>
<td>Therapeutic hypotheses using translational data</td>
<td></td>
<td></td>
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<tr>
<td>Protein Homeostasis and EpiGenetics</td>
<td>Chemistry</td>
<td></td>
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<tr>
<td>Immuno-Oncology and Cellular Therapy</td>
<td>Biotherapeutics</td>
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<tr>
<td>Inflammation &amp; Immunology</td>
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<tr>
<td>Neuroscience</td>
<td>Cell Therapies</td>
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An Introduction: Celgene Washington

- Research & Early Development site focused on Immuno-Oncology and Cellular Therapy – established in Seattle, 2013
- Collaboration with Juno Therapeutics for Cellular Therapy since 2015; led to acquisition of Juno by Celgene in 2018
- Combined entity now has over 900 employees in the state, adding expertise in Immunology and Cellular Therapy R&D, Clinical and Regulatory, CAR T Manufacturing
Global Oncology Collaboration in Cellular Therapy and IO

Selected Academic Partnerships

Selected Corporate Collaborations

*Some of our active collaborations

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The Pillars of Cancer Treatment

The Three “Pillars” of Cancer Treatment

- Radiation Therapy
- Surgery
- Chemo-Therapy

Emerging Pillars of Cancer Treatment

- Immuno-Oncology and Cell Therapy

Celgene’s CAR T cell therapies are investigational and have not been approved by the FDA.

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Advancing a High Quality Pipeline with Significant Potential

**Ozanimod**
- S1P1/5 agonist

**MS**
- RPC-4046
- Anti-IL-13
  - EoE

**SLE**
- CC-220
- CELMoD

**CC-90006**
- Anti-PD-1
  - PSOR

**CC-90001**
- CELMoD
- R/RAML

**R/R NHL**
- CC-486
- DNMT inhibitor
- NHL & CLL

**Solid Tumors**
- CC-90011
- LSD1 inhibitor

**MSC-1**
- Anti-LIF
  - Solid Tumors

**Liso-cel**
- CD19 CAR T
  - R/R CLL

**Luspatercept**
- TGFβ inhibitor
  - MF

**GEM333**
- CD3xCD33
  - AML

**FT-1101**
- BET inhibitor
  - MDS, AML

**REVLIMID®**
- IMiD
  - R/R NHL

**CC-93269**
- BCMA TCE
  - RRMM

**CC-92480**
- CELMoD
  - RRMM

**REVLIMID®**
- IMiD
  - MCL

**TRPH-222**
- CD22 ADC
  - NHL

**Liso-cel**
- CD19 CAR T
  - R/R NHL

**CC-90002**
- Anti-CD47
  - NHL

**CC-90010**
- BET inhibitor
  - NHL

**ISTODAX®**
- HDAC inhibitor
  - PTCL, CTCL

**TRPH-222**
- CD22 ADC
  - NHL

**CC-90010**
- BET inhibitor
  - NHL

**CC-486**
- DNMT inhibitor
  - NHL

**CC-90009**
- CELMoD
  - R/RAML

**CC-90002**
- Anti-CD47
  - NHL

**JTX-2011**
- ICOS agonist
  - Solid Tumors

**Tislelizumab**
- Anti-PD-1
  - Solid Tumors

**JAK2 kinase inhibitor**
- Luspatercept
  - MF

**IDH2 inhibitor**
- IDHIFA®
  - IDH2

**DEL 5q MDS**
- VIDAZA®
  - DNMT inhibitor
  - MDS, AML

**POMALYST®**
- IMiD
  - RRMM

**THALOMID®**
- IMiD
  - NDMM, RRMM

**Myeloid Disease**
- 10

**Multiple Myeloma**
- 9

**NHL & CLL**
- 10

**Liso-cel**
- CD19 CAR T
  - R/R NHL

**CC-90011**
- LSD1 inhibitor
  - Solid Tumors

**MSC-1**
- Anti-LIF
  - Solid Tumors

**Etgililimab**
- Anti-TIGIT
  - Solid Tumors

**AG-270**
- Mat2A inhibitor
  - Solid Tumors

**Solid Tumors**
- 9

**Myeloid Disease**
- 10

**Multiple Myeloma**
- 9

**Myeloid Disease**
- 10

**Legends**
- Ph I
- Market

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**Celgene has an exclusive option to license and/or option to acquire: TRPH-222, JTX-2011, Etgililimab, AG-270, and MSC-1.**

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**Dec 2018**
CAR T cells are a living drug

CAR T
Chimeric antigen receptor T (CAR T) cells are T cells from patients that have been engineered to recognize and bind to specific antigens on tumor cells.

Patients undergo leukapheresis for T-cell collection.

CAR DNA is transferred into T cells (e.g., by viral transduction).

CAR T cells are manufactured and then reintroduced to patients.

BCMA as a Target in Multiple Myeloma
B-cell maturation antigen (BCMA) is universally expressed on the surface of normal and malignant plasma cells.

CD19 as a Target in Non-Hodgkin Lymphoma
CD19 is universally expressed on the surface of normal and malignant B cells with limited expression outside of the B-cell lineage.

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Lisocabtagene Maraleucel (JCAR017): CD19 CAR T Cell Design

- Immunomagnetic selection
- Lentiviral transduction
- Expansion
- Formulated at specified composition of CD4+ and CD8+ CAR T cells
- Administered at precise doses of CD4+ and CD8+ CAR T cells

PBMC, peripheral blood mononuclear cell; scFv, single-chain variable fragment.


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## High Response Rates in R/R DLBCL

Potential Dose Response Relationship in CORE Patient Population; DL2 Chosen for Pivotal Cohort

<table>
<thead>
<tr>
<th></th>
<th>FULL</th>
<th>CORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Dose Levels (n=102)</td>
<td>All Dose Levels (n=73)</td>
</tr>
<tr>
<td>ORR (95% CI), %</td>
<td>75 (65-83)</td>
<td>80 (68-88)</td>
</tr>
<tr>
<td>CR (95% CI), %</td>
<td>55 (45-65)</td>
<td>59 (47-70)</td>
</tr>
<tr>
<td>3-mo ORR (95% CI), %</td>
<td>51 (41-61)</td>
<td>59 (47-70)</td>
</tr>
<tr>
<td>3-mo CR (95% CI), %</td>
<td>38 (29-48)</td>
<td>45 (34-57)</td>
</tr>
<tr>
<td>6-mo ORR (95% CI), %</td>
<td>40 (31-50)</td>
<td>47 (35-59)</td>
</tr>
<tr>
<td>6-mo CR (95% CI), %</td>
<td>34 (25-44)</td>
<td>41 (30-53)</td>
</tr>
</tbody>
</table>

Baseline high tumor burden well balanced between DL1 and DL2 (≈ 1/3)\(^b\)

\(^a\) Three patients treated on DL10 with similar outcomes.

\(^b\) Defined as sum of the products of diameters (SPD) > 50 cm².
Targeting BCMA Antigen: A Disruptive Approach to Myeloma Therapy

1. CAR-T Cell Therapy
   - bb2121* – pivotal KarMMa™ trial ongoing
   - bb21217* – phase I trial ongoing
   - JCARH125 – phase I trial ongoing

2. T Cell Engager Antibody
   - CC-93269 – phase I trial ongoing

3. Antibody Drug Conjugate
   - BCMA ADC** – preclinical

* In collaboration with bluebird bio. ** In collaboration with Sutro Biopharma.

3. Mailankody, ASH 2018 (Abstract 957)
4. Shah, ASH 2018

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Autologous T cells transduced with a lentiviral vector encoding a CAR specific for human BCMA

State of the art lentiviral vector system

Optimal 4-1BB costimulatory signaling domain: associated with less acute toxicity and more durable CAR T cell persistence than CD28 costimulatory domain

TUMOR RESPONSE: DOSE-RELATED; INDEPENDENT OF TUMOR BCMA EXPRESSION

### Tumor Response By Dose

<table>
<thead>
<tr>
<th>Dose (x10^6)</th>
<th>ORR (%)</th>
<th>mDOR (mo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>33.3</td>
<td>1.9</td>
</tr>
<tr>
<td>150</td>
<td>57.1</td>
<td>NE</td>
</tr>
<tr>
<td>&gt;150</td>
<td>50.0</td>
<td>10.8</td>
</tr>
</tbody>
</table>

**Median follow-up (min, max), d**
- 50 x 10^6 (n=3): 84 (59, 94)
- 150 x 10^6 (n=14): 87 (36, 638)
- >150 x 10^6 (n=22): 194 (46, 556)

### Tumor Response By BCMA Expression

<table>
<thead>
<tr>
<th>BCMA Expression</th>
<th>ORR (%)</th>
<th>mDOR (mo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low BCMA</td>
<td>100</td>
<td>10.8</td>
</tr>
<tr>
<td>High BCMA</td>
<td>91</td>
<td>54.5</td>
</tr>
</tbody>
</table>

**Median follow-up (min, max), d**
- 450 x 10^6 Low BCMA (n=8): 168 (121, 184)
- 450 x 10^6 High BCMA (n=11): 311 (46, 556)


Data cutoff: March 29, 2018. CR, complete response; mDOR, median duration of response; ORR, objective response rate; PD, progressive disease; PR, partial response; sCR, stringent CR; VGPR, very good partial response. *Patients with ≥2 months of response data or PD/death within <2 months. ORR is defined as attaining sCR, CR, VGPR, or PR, including confirmed and unconfirmed responses. Low BCMA is <50% bone marrow plasma cells expression of BCMA; high BCMA is defined as ≥50%.
PROGRESSION-FREE SURVIVAL

- mPFS of 11.8 months at active doses (≥150 × 10^6 CAR+ T cells) in 18 subjects in dose escalation phase
- mPFS of 17.7 months in 16 responding subjects who are MRD-negative

Data cutoff: March 29, 2018. Median and 95% CI from Kaplan-Meier estimate. NE, not estimable. PFS in dose escalation cohort.

## 5 Late-Stage Investigational Therapies Expected to Launch Through 2020

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozanimod</td>
<td>S1P1 Receptor Modulator for Relapsing Multiple Sclerosis</td>
<td>- U.S. NDA submitted Q1 2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRUE NORTH™ UC trial enrollment targeted to complete mid-2019</td>
</tr>
<tr>
<td>Fedratinib</td>
<td>Highly selective JAK2 inhibitor for myelofibrosis</td>
<td>- Priority review granted by FDA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- EU MAA submission planned in 2019</td>
</tr>
<tr>
<td>Liso-cel</td>
<td>CD19-targeted CAR T for relapsed/refractory diffuse large B-cell lymphoma</td>
<td>- U.S. submission anticipated 2H 2019</td>
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<td></td>
<td></td>
<td>- Data from Ph I CLL presented at ASH 2018</td>
</tr>
<tr>
<td>Luspatercept</td>
<td>First-in-class erythroid maturation agent for MDS and β-thalassemia</td>
<td>- MEDALIST™ and BELIEVE™ positive phase 3 studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- U.S. submission Apr 2019</td>
</tr>
<tr>
<td>bb2121</td>
<td>BCMA targeted CAR T for highly refractory multiple myeloma</td>
<td>- U.S. submission anticipated late 2019/early 2020</td>
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<tr>
<td></td>
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<td>- Clinical program in earlier treatment lines advancing</td>
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All therapies listed are investigational and not approved in any jurisdiction.

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