This presentation contains “forward-looking statements,” as that term is defined under the Private Securities Litigation Reform Act of 1995 (PSLRA), which statements may be identified by words such as “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “expect” and other words of similar meaning. These forward-looking statements involve certain risks and uncertainties. Such risks and uncertainties could cause our actual results to differ materially from those indicated by such forward-looking statements, and include, without limitation: the success, cost and timing of our product development activities and clinical trials; our ability to submit an IND and successfully advance our technology platform to improve the safety and effectiveness of our existing TCR therapeutic candidates; the rate and degree of market acceptance of T-cell therapy generally and of our TCR therapeutic candidates; government regulation and approval, including, but not limited to, the expected regulatory approval timelines for TCR therapeutic candidates; and our ability to protect our proprietary technology and enforce our intellectual property rights; amongst others. For a further description of the risks and uncertainties that could cause our actual results to differ materially from those expressed in these forward-looking statements, as well as risks relating to our business in general, we refer you to our Annual Report on Form 10-K filed with the Securities and Exchange Commission (SEC) on February 25, 2021 and our other SEC filings.

We urge you to consider these factors carefully in evaluating the forward-looking statements herein and you are cautioned not to place undue reliance on such forward-looking statements, which are qualified in their entirety by this cautionary statement. The forward-looking statements contained in this presentation speak only as of the date the statements were made and we do not undertake any obligation to update such forward-looking statements to reflect subsequent events or circumstances.

We intend that all forward-looking statements be subject to the safe-harbor provisions of the PSLRA.
Our vision and mission

Arming Cells. Against Cancer. For Good.

To transform the lives of people with cancer by designing and delivering cell therapies.
Our 5-year core value drivers
5-year core value drivers: our “2-2-5-2” plan

Two marketed SPEAR T-cell products targeting MAGE-A4
- Synovial sarcoma
- Esophageal and EGJ cancers

Two additional BLAs for SPEAR T-cell products
- Additional indications for MAGE-A4 targeted products
- ADP-A2AFP

Five autologous products in the clinic
- HiT
- Next-gen TILs
- New targets
- Broader HLA coverage

Two allogeneic products entering the clinic
- SPEAR T-cell product targeting MAGE-A4
- HiT mesothelin – partnered with Astellas

Integrated Cell Therapy Capabilities
Research | Preclinical | Translational | Clinical | CMC | Regulatory | Commercial

EGJ: esophagogastric junction cancer; HiT: HLA-independent T-cell receptor (TCR); TIL: tumor infiltrating lymphocyte; CMC: chemistry, manufacturing, and controls
Highlights from 2020: working toward our “2-2-5-2” plan

<table>
<thead>
<tr>
<th>Two marketed SPEAR T-cell products targeting MAGE-A4</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ ADP-A2M4 in synovial sarcoma</td>
</tr>
<tr>
<td>• Completed enrolment in SPEARHEAD-1 trial</td>
</tr>
<tr>
<td>• US and EU regulatory designations</td>
</tr>
<tr>
<td>• Durable responses in Phase 1 trial</td>
</tr>
<tr>
<td>✓ Responses in 4 indications confirming potential of SPEAR T-cells targeting MAGE-A4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Two additional BLAs for SPEAR T-cell products</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Initiated SPEARHEAD-2 trial with ADP-A2M4</td>
</tr>
<tr>
<td>• Completed enrolment in SPEARHEAD-1 trial combined with pembrolizumab for people with head and neck cancers</td>
</tr>
<tr>
<td>✓ Complete response* with ADP-A2AFP in a patient with liver cancer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Five autologous products in the clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Progressed preclinical pipeline</td>
</tr>
<tr>
<td>• Next-gen SPEAR T-cells</td>
</tr>
<tr>
<td>• SPEAR T-cells for additional HLAs</td>
</tr>
<tr>
<td>• HLA-independent TCRs</td>
</tr>
<tr>
<td>• Next-gen TILs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Two allogeneic products entering the clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Agreement with Astellas to co-develop and co-commercialize stem-cell derived allogeneic cell therapies (first target: mesothelin)</td>
</tr>
<tr>
<td>✓ Demonstrated differentiation of functional T-cells from human-induced pluripotent stem cells that can kill MAGE-A4 expressing target cells in vitro</td>
</tr>
</tbody>
</table>

* Best overall response
A strong autologous clinical pipeline in multiple clinical trials in 10 solid tumors
Goal to launch first TCR T-cell therapy in 2022

<table>
<thead>
<tr>
<th>Program</th>
<th>Therapy</th>
<th>Phase 1</th>
<th>Phase 2/3</th>
</tr>
</thead>
</table>
| MAGE-A4 | ADP-A2M4 | Phase 1 trial  
Multiple tumors* | SPEARHEAD-1  
Synovial sarcoma, MRCLS  
Enrollment complete  
BLA in 2022*** |
|         | ADP-A2M4CD8 | Radiation sub-study  
Multiple tumors** | SPEARHEAD-2  
Head & neck  
Combo with pembro. |
|         | SURPASS  
Focus on lung, gastroesophageal, head & neck, and bladder cancers | | |
| AFP     | ADP-A2AFP | Phase 1 trial  
Hepatocellular carcinoma | SURPASS-2  
Esophageal  
and EGJ cancers  
Initiating in 2021 |

*Bladder, Melanoma, Head & Neck, Ovarian, Non-small cell lung cancer (NSCLC), Esophageal, Gastric, Synovial sarcoma, MRCLS
**Site specific protocol amendment with MD Anderson Cancer Center
***Planned for synovial sarcoma
MRCLS: myxoid/round cell liposarcoma; EGJ: esophagogastric junction cancers
### Strong pipeline to deliver five products to the clinic by 2025

Aiming for curative and mainstream therapies

<table>
<thead>
<tr>
<th>Platform</th>
<th>Product</th>
<th>Discovery</th>
<th>Pre-clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autologous SPEAR T-cells</strong></td>
<td>ADP-A2AFP+CD8 next-gen</td>
<td><img src="image" alt="Noile-Immune Biotech" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>MAGE-A4 next-gen approaches (IL-7, IL-15, dnTGFbeta, PDE7)</td>
<td><img src="image" alt="Progress" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>IL-7/CCL19</td>
<td><img src="image" alt="Noile-Immune Biotech" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>Undisclosed</td>
<td><img src="image" alt="ALPINE Immune Sciences" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>HLA-A1 MAGE-A4</td>
<td><img src="image" alt="ALPINE Immune Sciences" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>HLA-A24 MAGE-A4</td>
<td><img src="image" alt="ALPINE Immune Sciences" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>HLA-A24 AFP</td>
<td><img src="image" alt="ALPINE Immune Sciences" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>PRAME</td>
<td><img src="image" alt="gsk" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td><strong>TILs</strong></td>
<td>TIL IL-7</td>
<td><img src="image" alt="HiT" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td><strong>HiTs</strong></td>
<td>HiT targets (e.g., GPC3)</td>
<td><img src="image" alt="HiT" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td><strong>Allogeneic</strong></td>
<td>HiT mesothelin</td>
<td><img src="image" alt="astellas" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
<tr>
<td></td>
<td>Allogeneic T-cells targeting MAGE-A4</td>
<td><img src="image" alt="Progress" /></td>
<td><img src="image" alt="Progress" /></td>
</tr>
</tbody>
</table>

**Note:**
- HIT: HLA-independent T-cell receptor (TCR); TIL: tumor infiltrating lymphocyte
Integrated capabilities delivering value across the pipeline

Examples of value creation
- SPEARHEAD-1 enrollment completed in ~12 months
- ADP-A2M4CD8 IND to registration directed trial ~2 years
- Security of vector supply and >90% reduction in costs
- Manufacturing innovation drives ~40% reduction in SPEAR T-cell therapy COGs

Integrated Cell Therapy Capabilities
Research | Preclinical | Translational | Clinical | CMC | Regulatory | Commercial
Planned data updates and catalysts for 2021 and 2022
Funded into 2023

2021
- Planned SPEARHEAD-1 preliminary data at ASCO
- Initiate SURPASS-2 trial with ADP-A2M4CD8 in esophageal and EGJ cancers
- Planned SURPASS data update at ESMO
- Planned ADP-A2AFP Phase 1 trial data update at ILCA
- Planned radiation sub-study data update at ASTRO
- Planned update on additional translational data at SITC
- Planned SPEARHEAD-1 full data update at CTOS

2022
- Planned to file BLA for ADP-A2M4 for people with synovial sarcoma
- Planned ADP-A2M4 launch in synovial sarcoma in the US
- Planned Preclinical pipeline program data updates
- Planned Allogeneic platform update
- Planned SPEARHEAD-2 initial clinical data
- Planned SURPASS-2 initial clinical data
- Planned first trial with TIL-IL7

Two marketed SPEAR T-cell products targeting MAGE-A4
Two additional BLAs for SPEAR T-cell products
Five autologous products in the clinic
Two allogeneic products entering the clinic

All data updates subject to congress acceptance
EGJ: esophagogastric junction
Clinical and market potential for SPEAR T-cells targeting MAGE-A4
Durable responses in synovial sarcoma
Impressive efficacy observed in ADP-A2M4 Phase 1 trial

Overall Response Rate of 44% and Disease control rate of 94%
Considerably superior* to response rates observed with available 2nd line therapies in synovial sarcoma

PR: partial response; SD: stable disease; PD: progressive disease

The power of SPEAR T-cells targeting MAGE-A4 in multiple tumor types
The basis for new Phase 2 trials and future BLAs

Confirmed PRs:
- *Esophagogastric Junction (EGJ)*
- *Head & Neck*
- *Lung*

Other reductions in tumor size:
- **Esophageal**
- **Urothelial (Bladder)**
- **Ovarian**
- **Melanoma**

*Crop 3 and Expansion; PR, partial response; SD, stable disease; PD, progressive disease*

Data represent percent changes from Baseline in sum of diameters in target lesions through progression or prior to surgical resection; Sum of diameters = sum of the long diameters for non-nodal lesions and short axis for nodal lesions; Responses evaluated by RECIST v1.1

Data cut-off October 1, 2020

ADP-A2M4CD8 SURPASS Trial
BOR in 6 patients with multiple tumor indications*

Data cut-off April 6, 2020

ADP-A2M4 Phase 1 trial best overall response (BOR) in 13 patients with multiple tumor indications*
Marked improvement in a patient with EGJ cancer treated with ADP-A2M4CD8

Single dose of 1.2 billion transduced cells with over 9 months until progression

31-yr-old male with Stage IV EGJ cancer, HER2_neg
Diagnosed July 2018

PRIOR THERAPY

- FLOT
- Atezo with BL-8040
- FOLFIRI
- Ramucirumab and paclitaxel (bridging)

Radiation
- 30 Gy to abdomen/retroperitoneal lymph node

ADP-A2M4CD8

High MAGE-A4 expression (100% 3+)
1.2 billion SPEAR T-cells: 30-Oct-2019

Typical adverse events

RESPONSE

Partial Response with 51.52% reduction in target lesions
Marked symptomatic improvement - reduced narcotic requirement for pain, resolution of ascites, general well-being
Disease progression ~8.5 months after receiving SPEAR T-cells
Large market opportunity potential with SPEAR T-cells targeting MAGE-A4
When considering all indications in our trials there is a large potential patient population eligible for treatment.

<table>
<thead>
<tr>
<th>Indication</th>
<th>Mortality US and EU*</th>
<th>MAGE-A4 Expression **</th>
<th>Potential MAGE-A4 +ve Patients</th>
<th>Potential MAGE-A4 +ve Patients Factored for HLA***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synovial sarcoma</td>
<td>1,804*</td>
<td>67 %</td>
<td>1,209</td>
<td>496</td>
</tr>
<tr>
<td>Myxoid/round cell liposarcoma</td>
<td>2,000</td>
<td>34 %</td>
<td>680</td>
<td>279</td>
</tr>
<tr>
<td>Gastroesophageal (esophageal, EGJ, and gastric)</td>
<td>101,080</td>
<td>17 %</td>
<td>17,184</td>
<td>7,045</td>
</tr>
<tr>
<td>Head and neck</td>
<td>44,500</td>
<td>18 %</td>
<td>8,010</td>
<td>3,284</td>
</tr>
<tr>
<td>Urothelial</td>
<td>53,180</td>
<td>33 %</td>
<td>17,549</td>
<td>7,195</td>
</tr>
<tr>
<td>NSCLC (squamous)</td>
<td>101,661</td>
<td>38 %</td>
<td>38,631</td>
<td>15,839</td>
</tr>
<tr>
<td>Melanoma</td>
<td>19,750</td>
<td>16 %</td>
<td>3,160</td>
<td>1,296</td>
</tr>
<tr>
<td>Ovarian</td>
<td>38,840</td>
<td>22 %</td>
<td>8,545</td>
<td>3,503</td>
</tr>
<tr>
<td><strong>Total MAGE-A4:</strong></td>
<td>94,968</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total MAGE-A4 HLA A2:</strong></td>
<td>38,937</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mortality figures based on American Cancer Society 2020 (US) and Global Can (EU); *Synovial sarcoma and MRCLS figures reflect advanced/refractory treatable patients based on internal primary market research

**MAGE-A4 expression based on ADAP samples and expression cut-off criteria of ≥30% tumor cells at ≥2+ intensity

***HLA A2 expression of 41% based on ADAP samples (1,043 patient samples)
Clinical and market potential for SPEAR T-cells targeting AFP
Complete response in the Phase 1 trial demonstrates potential of ADP-A2AFP

Trial ongoing in expansion phase

<table>
<thead>
<tr>
<th>Best overall response</th>
<th>Group 1 (n=2)</th>
<th>Group 2 (n=3)</th>
<th>Group 3 and expansion (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete response</td>
<td>0</td>
<td>0</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>Stable disease</td>
<td>2 (100%)</td>
<td>3 (100%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>Progressive disease</td>
<td>0</td>
<td>0</td>
<td>2 (50%)</td>
</tr>
</tbody>
</table>

Data cut-off July 6, 2020
## Market opportunity for SPEAR T-cells targeting AFP

### High unmet need for people with liver cancer

<table>
<thead>
<tr>
<th>Indication</th>
<th>Mortality US and EU*</th>
<th>Serum AFP Expression **</th>
<th>Potential AFP+ve Patients</th>
<th>Potential AFP+ve Patients Factored for HLA***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatocellular carcinoma (HCC)</td>
<td>75,860</td>
<td>51 %</td>
<td>38,689</td>
<td>15,862</td>
</tr>
</tbody>
</table>

---

**Mortality figures based on American Cancer Society (US) and Global Can (EU)**

**Serum AFP expression ranges based on internal samples (62 patients) and expression cut-off >100ng/mL**

***HLA A2 expression of 41% based on ADAP samples (1,043 patient samples)
Leveraging insights in early development
Two years from IND to planned registration-directed trial
SURPASS-2 trial planned for patients with esophageal and EGJ cancers 1H 2021

- Two patients with PRs
- Cohort 1, first patient treated had a RECIST response
- Tumor reduction in 5 of 6 patients

Improved target killing by next-gen CD4 T-cells

ADP-A2M4

No killing

ADP-A2M4CD8

Strong killing

Fit-for-purpose trial design

Focus on proof-of-concept decisions

- Phase 2 trial planned in patients with esophageal cancers* 1H 2021
- Focusing on 4 indications for expansion in SURPASS trial (gastroesophageal, lung, urothelial, head and neck cancers)
AKT inhibitor added during manufacturing improves T-cell product
Increased proliferation and killing

Enhanced proliferation to antigen *in vitro*

AKTi increases potency

% Change in T-Cell Number at Day 14 of Antigen-Stimulation

- Untreated
- AKTi

p=0.03*

*Wilcoxon matched-pairs signed rank test

Better killing with AKTi
Strong pipeline to deliver five products into the clinic by 2025
Strong pipeline to deliver five products to enter the clinic by 2025
Aiming for curative and mainstream therapies

Towards a Cure
- Insights from translational sciences
- Next-generation products
- Next-generation Tumor Infiltrating Lymphocytes (TILs)
- TCRs to alternative pHLA
- HLA-independent TCR (HiT) platform

Mainstream Therapy
Markers of patient response drive development of improved products
Single cell analysis of biomarker expression in SPEAR T-cell products
Expression of activation Marker X in SPEAR T-cells correlates with good tumor cell killing

**Activation Marker X**

- No SPEAR T-cells
- Marker X+ve SPEAR T-cells
- Marker X-ve SPEAR T-cells

![Graph showing live tumor cell count vs SPEAR T-cell expression of Marker X](attachment:graph.png)
Enhancing SPEAR T-cells to improve patient response, survival and quality of life

Next-generation products

Promote immunological memory
Improve T-cell function, proliferation and survival
Overcome tumor resistance mechanisms

Next-Generation Products

Improve T-cell homing and tumor penetration
Evoke a wider immune response

Toolbox of next-gen constructs developed
- CD8alpha (SURPASS trial)
- IL7
- PDE-7
- dnTGFbeta
- IL15
- IL7 + CCL19
- Undisclosed

Migration of SPEAR T-cells induced by CCL19

+ CCL19
- CCL19
Partnership with leading TIL therapy center (CCIT, Denmark) led by Inge-Marie Svane

- Tumor Infiltrating Lymphocytes (TILs) therapy is efficacious in solid tumors, including melanoma
- Aim to transform patient responses with a next-generation TIL product
  - TIL-IL7 product progressing to the clinic
- Builds on our strengths in TCR discovery, next generation product development and manufacturing
- Broad market potential
Increase treatable patient population with products targeting additional HLA types
Towards mainstream therapy

Single HLA allele frequency in patients

MAGE-A4
• HLA-A*02 41%
• HLA-A*01 25%
• HLA-A*24 26%

AFP
• HLA-A*02 41%
• HLA-A*24 26%

> 70% patients treatable with products targeting HLA-A*02, *01 and *24

HLA data taken from first 1,043 patients screened in our trials
Expanding our TCR expertise into HLA-independent TCRs (HiTs)
Leveraging internal innovation to establish a new therapeutic platform

HiTs are natural TCRs that bind to cell surface targets independently of HLA presentation

- Builds on our strengths in TCR discovery
- HLA-independent: Potential to treat all antigen positive patients
- Potential advantages over CARs
- Aim to be first to market with a HiT
- Development of first HiT in allogeneic platform with Astellas
HLA-independent TCRs (HiTs) bind directly to the target, mesothelin

Mesothelin-targeted HiTs kill mesothelin-expressing tumor cells in vitro

- **HiT binds recombinant mesothelin directly - Independent of HLA**

- **K_D = 0.8 µM**
- **T_1/2 = 6.6 s**

- **T-cells transduced with mesothelin HiT kill mesothelin-positive tumor cells**

- **Line graph showing binding (RU) vs. concentration [µM]**

- **Bar graph showing dead tumor cells**

**Control**
- Mesothelin -ve

**Mesothelin Expressing Tumor Cells**
- **Dead Tumor Cells: KD = 0.8 µM, T_1/2 = 6.6 s**

**Astellas**

**Adaptimmune**
Our allogeneic platform: towards mainstream cell therapy
Gene edited stem cells provide a flexible platform while minimizing batch to batch variation
Potential to build a broad family of future products across multiple cell types

**Stem cells**
- Single donor - cord blood
- High proliferative potential
- Reproducible starting material

**Gene Editing**
- Overcomes lentivector capacity limit
- Flexibility to add multiple next gens

**GMP**
- Single cell line for characterization
- Defined media composition
- No serum or feeder lines

Greater Control
Differentiation process mimics early T-cell development in a dish
Hematopoietic organoids generate T-cell progenitors that mature to form iT-cells.

Stem cells (starting material)
Hoescht blue, OCT4 green, TRA160 red

Complex 3D structures self assemble
Brightfield

Hemogenic endothelium forms
Hoescht blue, CD45 green, CD34 red

T-cells form
Hoescht blue, CD3 green
Our allogeneic iT-cells kill MAGE-A4 expressing target cells
Stem cell derived allogeneic iT-cells kill faster than first-generation autologous SPEAR T-cells

Autologous T-cells
transduced with ADP-A2M4 lentivirus

Allogeneic iT-cells
edited to express the same SPEAR TCR targeting MAGE-A4

Non-transduced autologous T-cells have no effect on tumor line growth
Autologous ADP-A2M4 SPEAR T-cells kill targets 18-24hr after addition

Tumor line growth curve (no T-cells added)
Allogeneic iT-cells start killing targets 6-9hr after addition
Company overview and financials
Leading capabilities for designing and delivering cell therapies
Integrated, internal capabilities are the foundation for long-term value creation

~460 FTEs

Philadelphia
- Autologous product manufacturing
- Clinical Development
- Commercial
- Corporate

Milton Park
- Pipeline Research
- Allogeneic research
- Process and analytical development
- Corporate

Stevenage
- GMP lentiviral vector manufacturing

Speed of innovation
- Commercial Product
- Research and preclinical
- Product Improvement
- Mfg and clinical development
- Integrated Translational Analysis
- Speed to the clinic

As of December 2020
Cash runway into early 2023

Current total liquidity at end of 2020 was $368M*

Well financed and ready to execute on broad range of opportunities/value drivers

* As of December 31, 2020 - Total Liquidity (a non-GAAP financial measure) is the total of cash and cash equivalents and marketable securities, which is explained and reconciled to the most directly comparable financial measures prepared in accordance with GAAP in our Annual Report on Form 10-K filed with the SEC on February 25, 2021.