CAP-1002: HOPE Clinical Trials
PPMD Annual Conference 2018
Forward-Looking Statements

Statements in this presentation regarding the efficacy, safety, and intended utilization of Capricor's product candidates; the initiation, conduct, size, timing and results of discovery efforts and clinical trials; the pace of enrollment of clinical trials; plans regarding regulatory filings, future research and clinical trials; regulatory developments involving products, including the ability to obtain regulatory approvals or otherwise bring products to market; plans regarding current and future collaborative activities and the ownership of commercial rights; scope, duration, validity and enforceability of intellectual property rights; future royalty streams, expectations with respect to the expected use of proceeds from the recently completed offerings and the anticipated effects of the offerings, and any other statements about Capricor's management team's future expectations, beliefs, goals, plans or prospects constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Any statements that are not statements of historical fact (including statements containing the words "believes," "plans," "could," "anticipates," "expects," "estimates," "should," "target," "will," "would" and similar expressions) should also be considered to be forward-looking statements. There are a number of important factors that could cause actual results or events to differ materially from those indicated by such forward-looking statements. More information about these and other risks that may impact Capricor's business is set forth in Capricor's Annual Report on Form 10-K for the year ended December 31, 2017 as filed with the Securities and Exchange Commission on March 22, 2018, in its Registration Statement on Form S-3, as filed with the Securities and Exchange Commission on September 28, 2015, together with the prospectus included therein and prospectus supplements thereto and in its Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, as filed with the Securities and Exchange Commission on May 14, 2018. All forward-looking statements in this press release are based on information available to Capricor as of the date hereof, and Capricor assumes no obligation to update these forward-looking statements.
Evolution of Capricor’s Science and Clinical Development
• CAP-1002 is a biologic product consisting of allogeneic cardiosphere-derived cells (CDCs) derived from donated heart muscle

• Do not act by “stemness” – do not engraft into host tissue

• Acts by releasing extracellular vesicles, or exosomes
  ✓ Contain non-coding RNAs and proteins
  ✓ Internalized by target cells
  ✓ Stimulate diverse and lasting changes in cellular behavior

• CAP-1002 has been investigated in several clinical trials and more than 130 human participants
CDCs after administration are retained in the lungs from where they secrete exosomes and growth factors that can travel through the circulatory system and promote tissue regeneration.
Effects of CDCs in mdx Mouse Model

- Following a single administration of CDC or vehicle to mdx mice:

**Improved cardiac function**

- Left ventricular ejection fraction markedly improved vs. control
  
  \[ p<0.05 \text{ at all timepoints through Week 12} \]

**Increased exercise capacity**

- Exercise performance approximately doubled vs. control
  
  \[ p<0.005 \text{ at all timepoints through Week 12} \]

Effects of CDCs in mdx Mouse Model

- Following a single administration of CDC or vehicle to mdx mice:

**Enhanced skeletal muscle function**

- Twitch force, tetanic force, and fibrosis in soleus (slow-twitch) and extensor digitorum longus (fast-twitch) muscles significantly improved vs. control

\[ p<0.05 \text{ in muscles isolated at three weeks post-treatment} \]

Challenges for DMD Therapies

- Exon Skipping
- Gene therapy
- Utrophin
- NF-kB
- Steroids

Challenges
- EXONDYS 51 (~13% of DMD population)
- Steroids - side effects
- Gene Rx - limited by antibody response
- NF-kB inhibition may not be adequate to mediate immune response
- Exon Skipping
- Gene therapy
- Utrophin
- NF-kB
- Steroids

CAP-1002
- Immunomodulatory
- Anti-fibrotic
- Pro-angiogenic
- Pro-regenerative
- Cellular Energy

We believe CAP-1002 may be used synergistically with other therapeutics aimed to treat the underlying genetic mutation with DMD
HOPE-Duchenne Clinical Trial

- Phase I/II, randomized, open-label
- Enrolled participants with heart disease related to DMD
- CAP-1002 vs. usual care
- One-time infusion of 75M cells into coronary arteries
- Evaluated safety and exploratory efficacy endpoints

<table>
<thead>
<tr>
<th>Participants</th>
<th>Mean Age</th>
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<tr>
<td>25</td>
<td>18 years</td>
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<table>
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<tr>
<th>Non-Ambulatory</th>
<th>Mean EF</th>
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<td>68%</td>
<td>49%</td>
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Key Conclusions from HOPE Trial Results

- **CAP-1002 (75M cells) generally safe and well-tolerated**
  - Adverse events consistent with intracoronary infusion

- **Month 12: heart scar increased in Usual Care group & decreased in CAP-1002 group**
  - 11.9% group difference in change score (p=0.03)

- **Trends towards improved upper limb function**
  - Sustained benefit likely to require repeat doses

*P-values are based on absolute change from baseline*
**Design**: Phase 2, randomized, double-blind, placebo-controlled trial

**Objective**: Evaluate safety and efficacy of CAP-1002 administered every three months in participants with DMD and reduced muscle function

**Sites**: 10-15 (USA)

**Open-Label Extension**: If recommended by a DSMB, CAP-1002 will be offered to participants who were randomized to placebo and completed the trial
HOPE-2 Endpoints

**Primary**
- Upper-limb function at Month 12 by PUL
- Pre-specified safety events

**Secondary**
- Upper-limb function at Months 3, 6, & 9 by PUL
- Cardiac function by MRI
- Incidence and severity of AEs

**Exploratory**
- Elbow, grip, & pinch strength
- Pulmonary function testing
- NSAA
- Blood biomarkers
- Quality of life
- Resource utilization
### HOPE-2 Eligibility

#### Key Inclusion Criteria
- Genetic confirmation of DMD
- Reduced upper limb strength as measured by PUL
- Reduced ability to walk/run
- Systemic glucocorticoids for at least 12 months, and stable dose for at least 6 months

#### Key Exclusion Criteria
- LVEF < 35%
- FVC < 35%
- BMI > 45
- Ambulant if ≥ 18 years of age
- Mutations in DMD gene
  - Exon 44 skip-amenable
  - Deletion in exons 3-7
- FDA-approved DMD exon-skipping therapy if on stable dose for less than 24 months
- Cell therapy product within 12 months
- Investigational product within 6 months
HOPE-2 Enrollment

• Actively enrolling participants
• First participant treated in April 2018
• Currently enrolling sites:
  - University of California, Davis
    Craig McDonald, MD
  - University of Utah
    Russell Butterfield, MD
  - Children’s Hospital of Colorado
    Joanne Janas, MD
  - Washington University, St. Louis
    Anne Connolly, MD
• More sites expected in Summer 2018
HOPE-2 Considerations

- Ambulatory & non-ambulatory boys and young men may be eligible
- Visits approximately every 3 months
- Robust travel policy to reduce burden on participants & families
- Open-label extension to offer CAP-1002 to participants randomized to placebo

For more information, visit hope2trial.com or clinicaltrials.gov (NCT03406780)
Thank You!

- HOPE-Duchenne & HOPE-2 Trial participants
- Patient advocacy groups
DMD Advisory Board

- Barry Byrne, MD, PhD
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