



# Unlocking Epigenetic Therapeutics to Revolutionize Medicine

June 2025



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# Company Highlights

## Larsucosterol: Phase 3-ready, potential life-saving treatment for alcohol-associated hepatitis (AH)

- **Compelling results from 307-patient placebo-controlled Phase 2b AHFIRM trial**
  - Improvement in 90-day survival and transplant-free survival
  - Well tolerated with no drug-related toxicities
  - Results published in *NEJM Evidence* in January 2025
- **Preparing to initiate 200-patient Phase 3 trial in U.S. with 90-day survival endpoint – data expected within 2 years of trial initiation**
  - Type B meeting with FDA resulted in agreement on key aspects of trial design
  - Single pivotal trial required for NDA submission
- **Granted Breakthrough Therapy and Fast Track designations by the FDA**
  - Breakthrough Therapy designation allows for frequent interactions with FDA and rolling NDA submission
- **Significant unmet need: >\$1 billion peak sales potential in U.S.<sup>1</sup>**
  - 90-day mortality rate of ~30%<sup>2</sup>
  - No approved therapy for AH

<sup>1</sup> Market Research – ClearView Analysis 2023

<sup>2</sup> Hughes E, Hopkins LJ, Parker R. 2018. *PLOS ONE*, 13(2): e0192393

A faint, stylized illustration of a DNA double helix structure, rendered in light green and white, occupies the left side of the slide.Several thick, diagonal green bars of varying shades are positioned in the top right corner of the slide.

# **Larsucosterol** Potential in Alcohol-associated Hepatitis

# Larsucosterol: Our Lead Epigenetic Modulator Program

**Phase 3-ready in AH with novel mechanism of action**

## Potent DNMT Modulator

- Inhibition of DNMT-1, 3a & 3b aligns with AH biology
- Supports investigating larsucosterol for the treatment of multiple acute organ injuries and chronic liver diseases

## Positive Effects on Key Cellular Functions

- Stabilizes mitochondria
- Reduces lipotoxicity
- Regulates inflammation and stress response
- Promotes cell survival

## Demonstrated Clinical Efficacy and Safety

- Completed Phase 2b AHFIRM trial showed compelling efficacy signal in AH patients
- Well tolerated at all doses
- >500 subjects dosed in multiple completed Phase 1 and Phase 2 studies

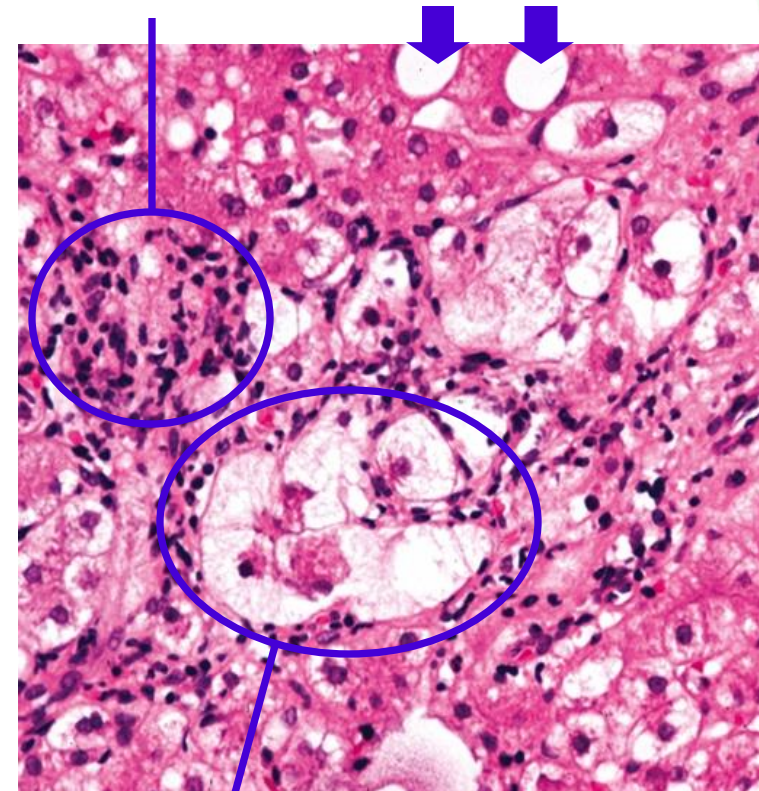


# What is Alcohol-associated Hepatitis?

**90-day mortality rate: ~30%<sup>1</sup>**

- Life-threatening form of alcohol-associated liver disease
- Can occur in individuals who chronically misuse alcohol; frequently manifests after increased consumption
- Excessive drinking can cause significant – but reversible – liver impairment leading to hepatocyte death
- Characterized by jaundice and severe multi-system inflammation – indicative of SIRS (Systemic Inflammatory Response Syndrome)<sup>2</sup>
- SIRS may progress to multi-organ failure and ultimately death

**Neutrophilic Inflammation    Fat Globules**



**Ballooning Degeneration**

<sup>1</sup> Hughes E, Hopkins LJ, Parker R. 2018. *PLOS ONE*, 13(2): e0192393

<sup>2</sup> Crabb DW, Im GY, Szabo G, Mellinger JL, Lucey MR. 2020. *Hepatology* 71: (1) 306-333

# Current Treatments for AH are Inadequate with No Approved Therapies

## Corticosteroids

- Used as first-line treatment despite lack of demonstrated survival benefit
- Only 25% to 45% of patients are eligible for corticosteroids due to well known complications and contraindications<sup>1,2,3,4,5,6</sup>

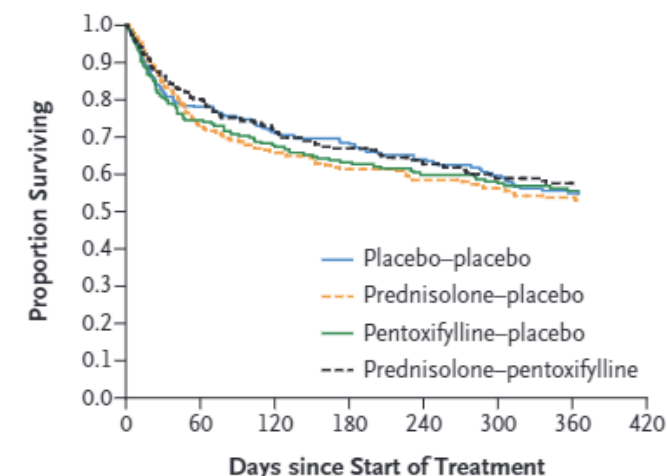
## Liver Transplant

- Limited availability of donated organs restricts access<sup>3,7,8</sup>
  - High liver transplant costs >\$875,000
  - Requires lifetime of immunosuppression

## Few Programs in Clinical Development

- Most advanced competitive clinical program is in Phase 2a
- No other randomized clinical trials have reduced 90-day mortality

One-Year Survival in All Groups <sup>9</sup>



No. at Risk

Placebo-placebo	272	199	159	142	121	104	89
Prednisolone-placebo	274	182	139	116	102	91	84
Pentoxifylline-placebo	271	178	133	119	104	95	83
Prednisolone-pentoxifylline	272	201	157	137	115	101	84

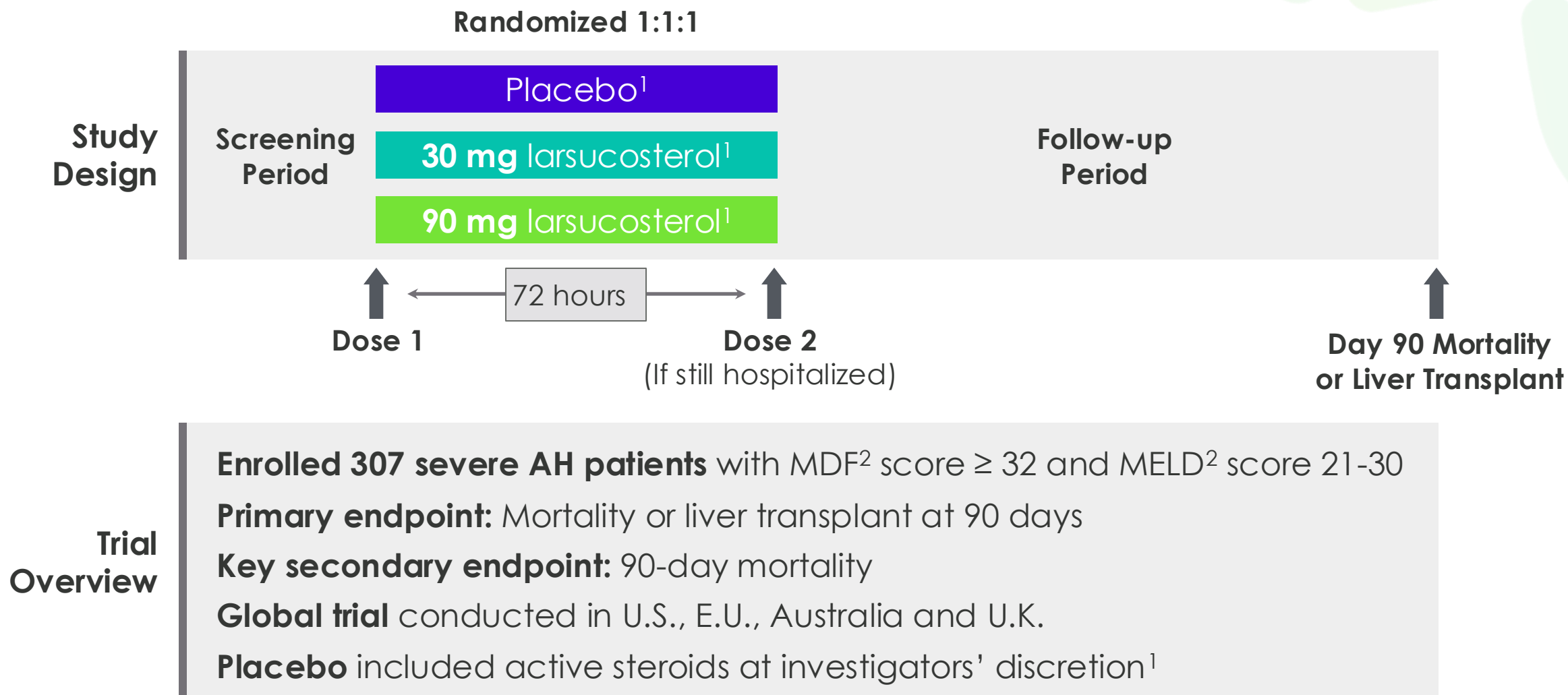


# Larsucosterol AHFIRM Trial

Phase 2b Trial in AH to Evaluate Safety  
and Efficacy of Larsucosterol



# Phase 2b AHFIRM Trial Design



<sup>1</sup> All patients received supportive care, which for placebo patients included methylprednisolone capsules at the investigators' discretion. In order to maintain blinding, patients in the two larsucosterol arms received matching placebo capsules if the investigator prescribed steroids.

<sup>2</sup> Maddrey's Discriminant Function (MDF); Model for End-Stage Liver Disease (MELD).

## Median Baseline Characteristics by Arm – Global Population

	Placebo	Larsucosterol 30 mg	Larsucosterol 90 mg
Number of patients randomized	103	102	102
Number of patients with 90-day outcome data	102 <sup>1</sup>	99	101
MELD <sup>2</sup>	25.0	24.0	25.0
MDF	61.5	57.2	63.0
Age	47.0	44.0	43.0

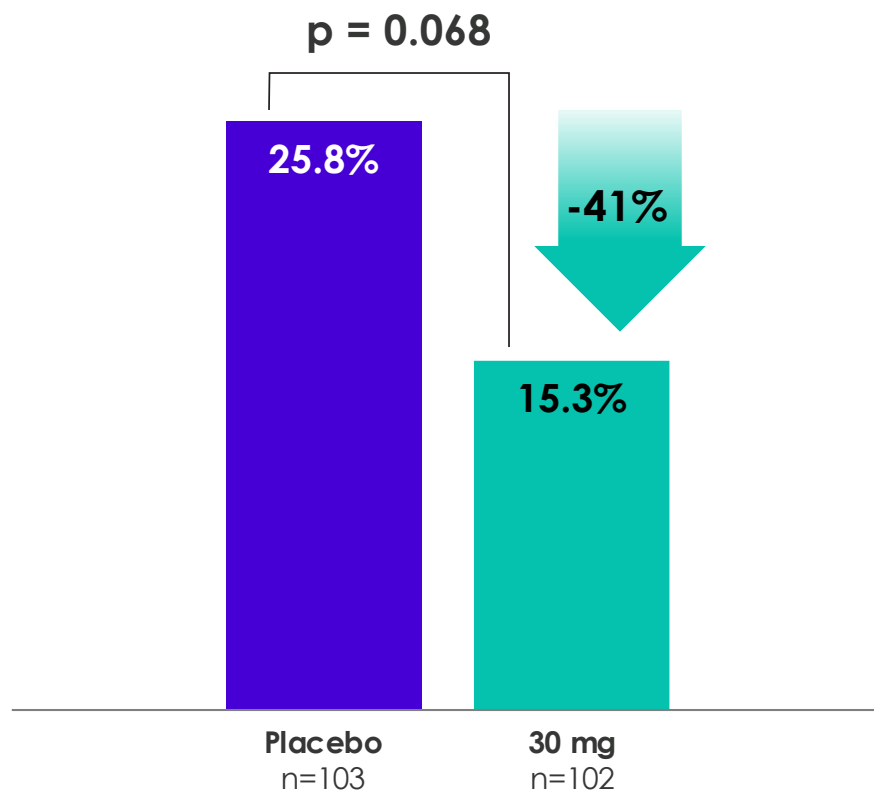
# Trial Outcomes by Arm – Global Population

	Placebo <sup>1</sup>	Larsucosterol 30 mg	Larsucosterol 90 mg
<b>Global:</b>	n=102	n=99	n=101
Deaths	25 (24.5%)	15 (15.2%)	17 (16.8%)
Transplants	4 (3.9%)	6 (6.1%)	9 (8.9%)
Alive & Transplant-free	73 (71.6%)	78 (78.8%)	75 (74.3%)
<b>All Alive</b>	<b>77 (75.5%)</b>	<b>84 (84.8%)</b>	<b>84 (83.2%)</b>
<b>U.S.:</b>	n=77	n=73	n=77
Deaths	21 (27.3%)	8 (11.0%)	10 (13.0%)
Transplants	4 (5.2%)	5 (6.8%)	8 (10.4%)
Alive & Transplant-free	52 (67.5%)	60 (82.2%)	59 (76.6%)
<b>All Alive</b>	<b>56 (72.7%)</b>	<b>65 (89.0%)</b>	<b>67 (87.0%)</b>

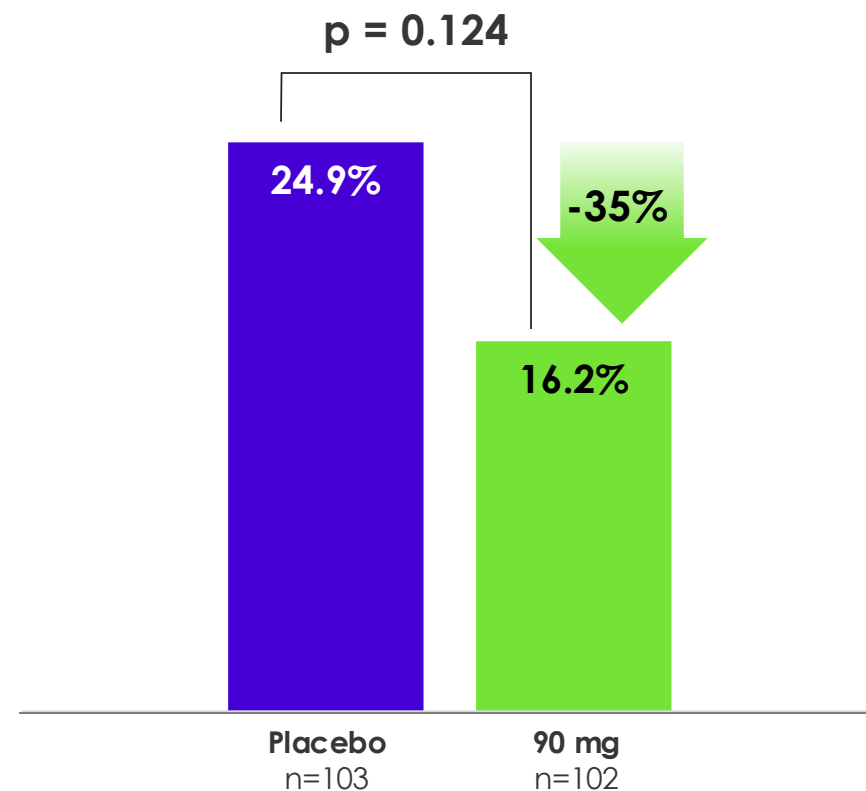
<sup>1</sup>One subject in placebo group was confirmed alive at Day 90 but transplant status unknown. One patient received a liver transplant and subsequently died.

# Clinically Meaningful Trend Toward Reduced Mortality – Global (ITT)

Mortality at 90 Days  
30 mg Larsucosterol vs. Placebo<sup>1</sup>



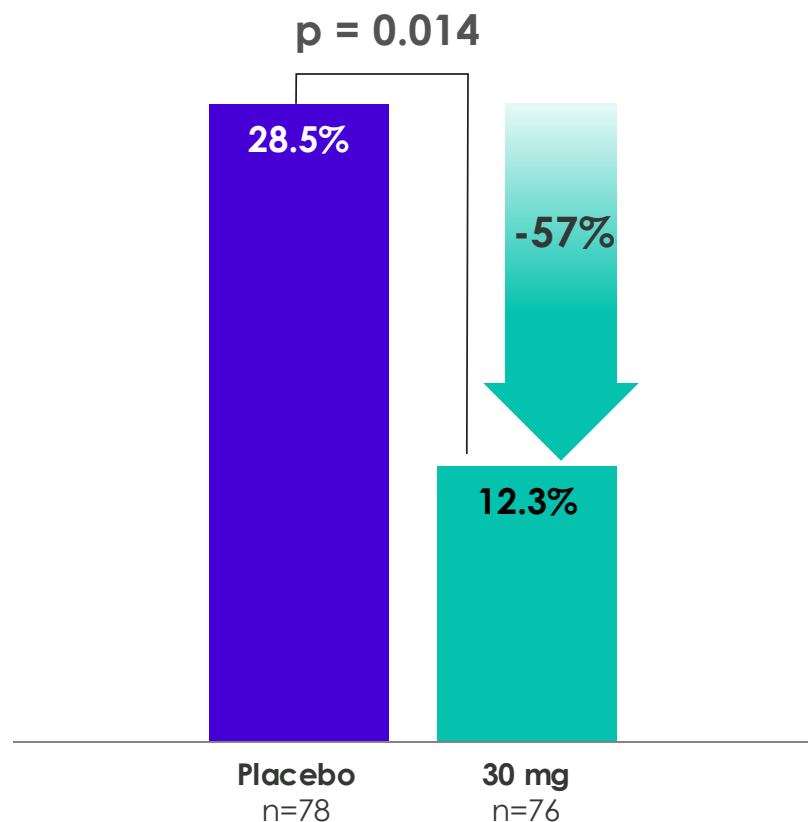
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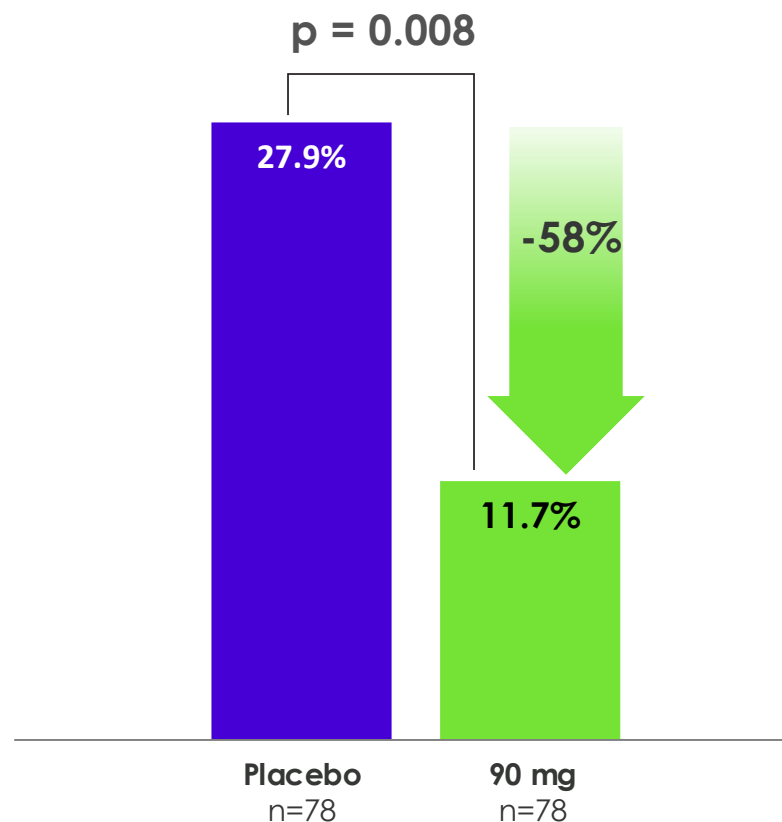
<sup>1</sup> Sites with enrollment <5 patients were pooled resulting in different mortality rates for placebo compared with 30 mg and 90 mg larucosterol doses. ITT includes 5 patients with missing 90-day outcome data. The analyses were adjusted by the method of multiple imputations to account for these subjects.

# Pronounced Reduction in Mortality Observed in U.S. Patients (ITT)

Mortality at 90 Days – U.S. Patients  
30 mg Larsucosterol vs. Placebo<sup>1</sup>



Mortality at 90 Days – U.S. Patients  
90 mg Larsucosterol vs. Placebo<sup>1</sup>



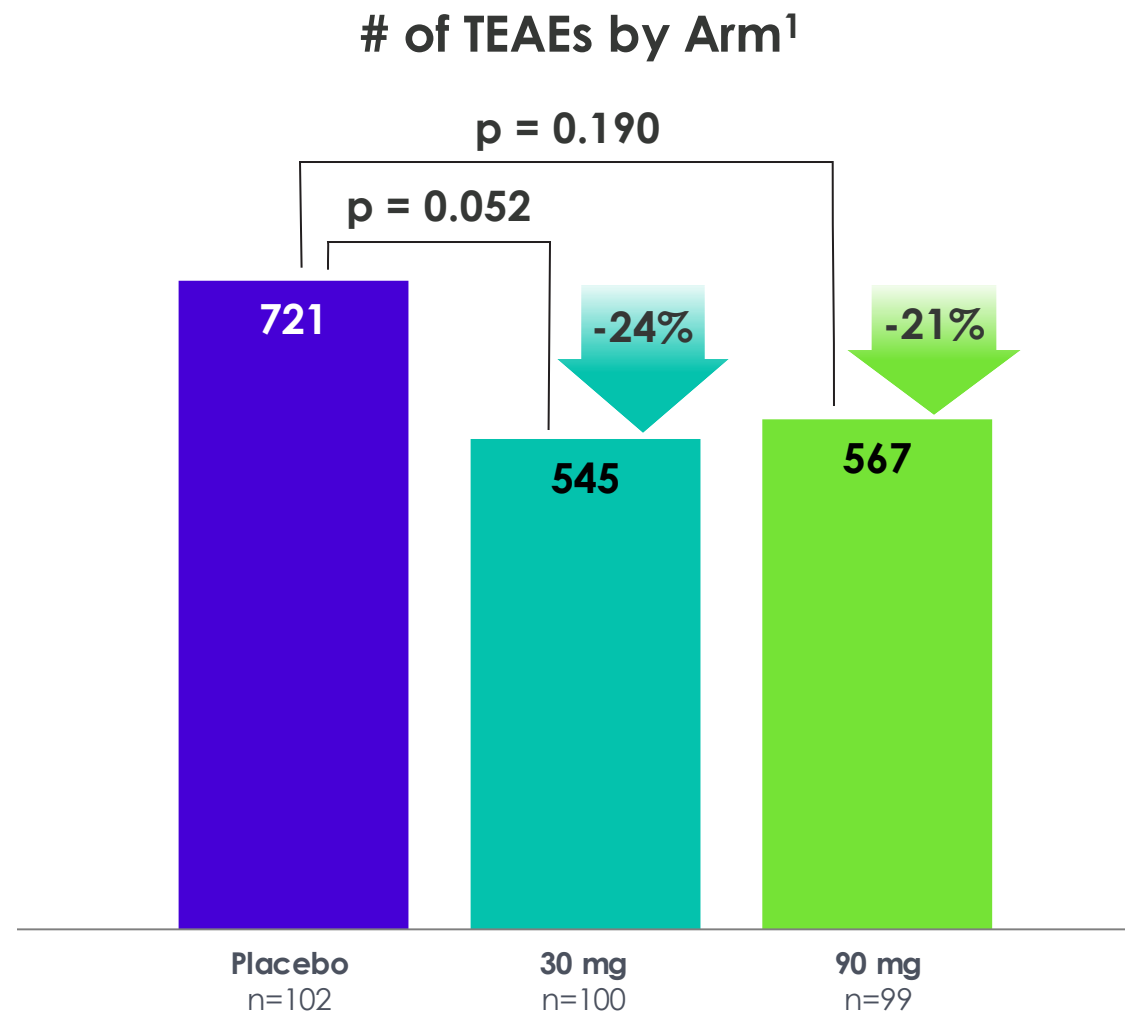
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# Larsucosterol Was Well-Tolerated

Numerically fewer TEAEs in both 30 mg and 90 mg arms compared with placebo

No meaningful difference in serious AEs and none attributed to larsucosterol



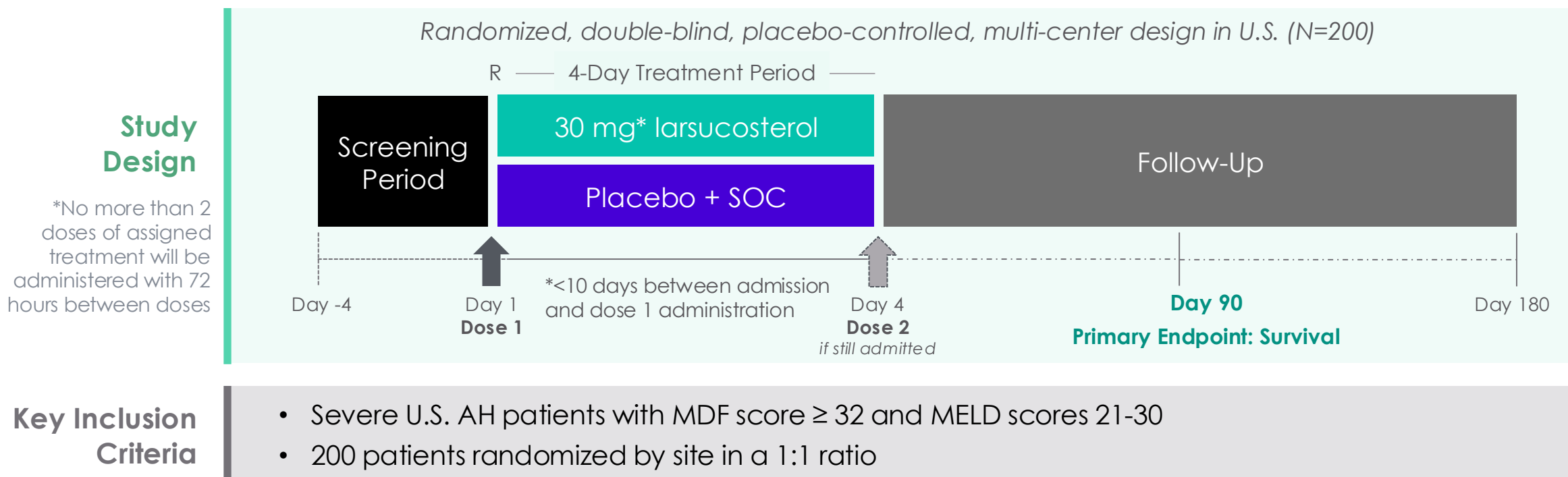
# Key Learnings from AHFIRM Trial

## Phase 3 trial design incorporates important findings from AHFIRM trial

AHFIRM Trial Factor	Key Takeaways
1. <b>Dose:</b> Both doses of larsucosterol appeared to have similar efficacy and safety profiles	Conduct Phase 3 trial with 30 mg dose compared with placebo
2. <b>Inclusion of transplants in primary endpoint:</b> Transplants are a confounding factor	Use primary endpoint of survival
5. <b>Regional differences:</b> Treatment practices and disease definition vary by region	Conduct Phase 3 trial in U.S. only
4. <b>Time to treatment:</b> Early treatment following hospitalization is critical	Treat patients in <10 days
5. <b>Randomization:</b> Central randomization resulted in imbalances across arms	Randomize by site

# Registrational Phase 3 Trial Design

Topline data expected within 2 years of trial initiation



A faint, stylized DNA double helix structure is visible on the left side of the slide, rendered in a light green color.

# **Larsucosterol**

## Commercial Opportunity in AH

# AH Imposes High Economic Burden on U.S. Healthcare System

- ~164,000 U.S. hospitalizations in 2021<sup>1</sup>
- Incidence may result in ~300K hospitalizations by 2034<sup>2</sup> based on historical yearly growth rate of 5.5% between 2015-2019<sup>3</sup>
- Increased physician and hospital awareness of AH could result in more robust ICD-10 coding and increased recorded hospitalizations
- 88% of hospitalized AH patients are insured<sup>1</sup>

**Each hospitalization episode with AH<sup>1</sup>:**

**Average hospital charges/length of stay**

Died during hospitalization (2021)

**~\$181,000/10 Days**

Were discharged (2021)

**~\$68,000/6 days**



<sup>1</sup> National Inpatient Sample 2021.

<sup>2</sup> Market Research – ClearView Analysis 2023.

<sup>3</sup> Marlowe N et al. 2022. *Alcohol Clin Exp Res*, 46(8):1472-1481.



# Larsucosterol Value Proposition Supports Blockbuster Potential

If approved, larsucosterol has the potential to become a >\$1B/year drug in the U.S. for the AH indication alone

## REDUCTION IN MORTALITY

Physicians prioritize **mortality as the most important endpoint**, and nearly all found a potentially significant reduction in 90-day mortality rate clinically meaningful

## HOSPITAL COST OFFSET ECONOMICS

Reducing costly **length and frequency of ICU stays** is key for offsetting drug costs and securing favorable hospital formulary inclusion

## REDUCTION IN HEALTHCARE SYSTEM COST BURDEN

Hospital economics and payer stakeholders may use **reduction in 30-day readmissions** to assess impact on per-patient cost burden

# Our Market Survey Indicates Physicians Are Enthusiastic About Larsucosterol

## MECHANISM OF ACTION

High enthusiasm for novel, specific MOA which targets the underlying liver inflammation and degradation



## CLINICAL EFFICACY

Reduction in 90-day mortality viewed as an advancement, as steroids do not show an effect on mortality past 28 days



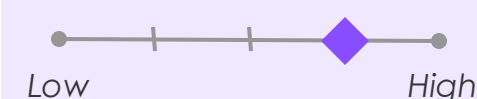
## SAFETY AND TOLERABILITY

Larsucosterol safety profile was well-received, with hundreds of patients dosed, viewed as compelling for use



## DOSING AND ADMINISTRATION

Physicians saw no issues with inpatient IV doses



# Larsucosterol Intellectual Property & Regulatory Highlights

15

PATENT FAMILIES

Each include pending patent applications that, if granted, could result in protection until at least 2032 to 2044

7

ISSUED PATENTS

Seven patent families each include at least one granted patent that could provide protection until at least 2026, 2032, 2034, 2035, 2037, 2037, and 2037, respectively

**BREAKTHROUGH  
THERAPY**  
DESIGNATION

Designation provides intensive guidance and organizational commitment from senior FDA managers

**FAST  
TRACK**  
DESIGNATION

FDA designation for larsucosterol in the U.S. indicates the EMA could grant similar regulatory recognition in the EU

# Larsucosterol – Positioned for Success in AH

## Compelling AHFIRM Mortality Results

- Compelling outcome on key secondary endpoint of mortality reduction at 90 days
- Pronounced impact on mortality in U.S. population
- Breakthrough Therapy and Fast Track designations

## Clinical Safety

- Well tolerated, no drug-related toxicities
- Numerically fewer TEAEs in AHFIRM
- No serious AEs in AHFIRM attributed to larsucosterol
- More than 500 patients dosed in multiple Phase 1 and 2 trials

## >\$1 Billion Peak Sales Potential for AH in U.S.<sup>1</sup>

- ~164,000 annual hospitalizations in U.S.<sup>2</sup>
- ~\$10 billion annual direct hospital charges in U.S.<sup>2</sup>
- No approved therapy
- Potential patent protection through at least 2044

**Preparing to initiate Phase 3 trial with topline data expected within 2 years of initiation**

# Financial Overview

Cupertino, CA headquarters

Nasdaq	DRRX
Shares O/S	31.0 MM <sup>1</sup>
Cash & Cash Equivalents	\$8.4 MM <sup>2</sup>





# Company Highlights

## Larsucosterol: Phase 3-ready, potential life-saving treatment for alcohol-associated hepatitis (AH)

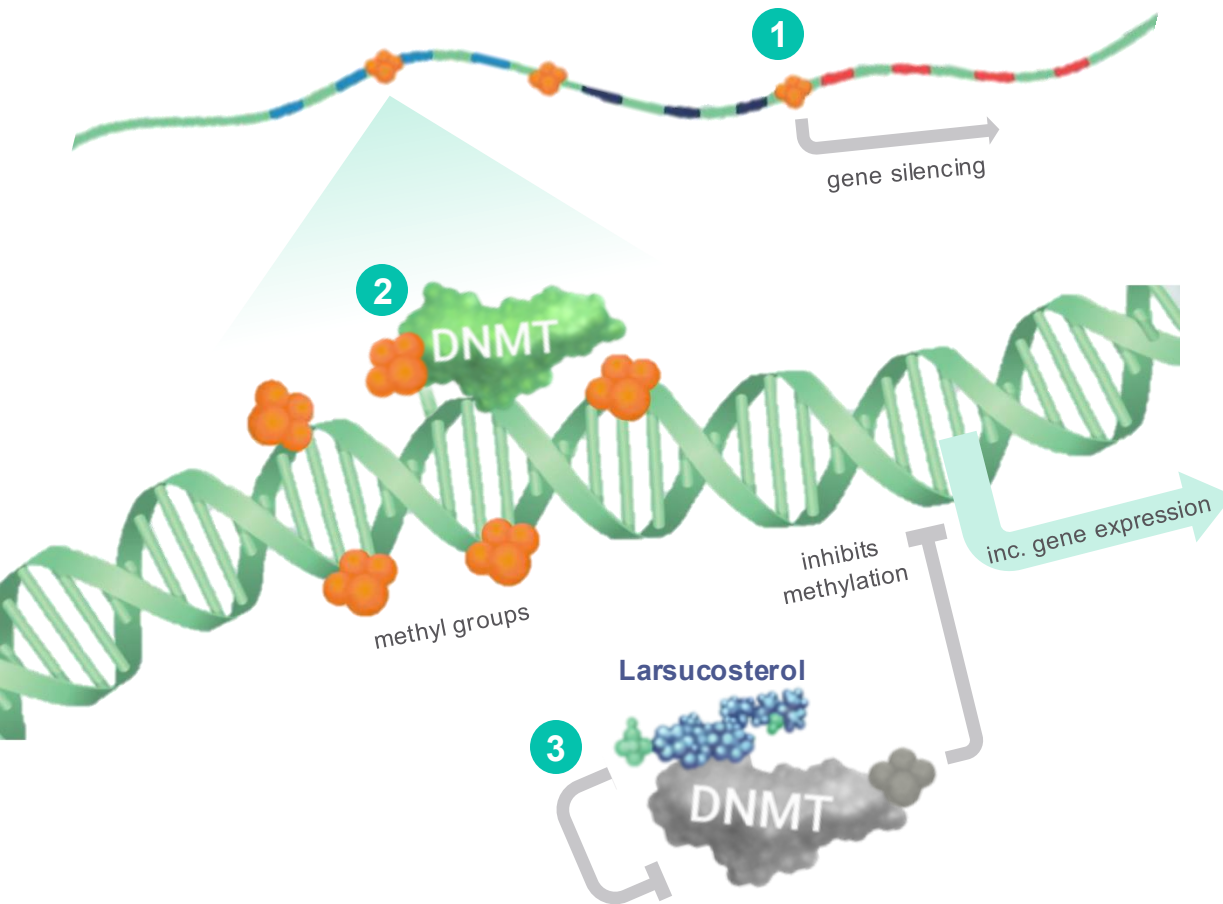
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  - Type B meeting with FDA resulted in agreement on key aspects of trial design
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- **Significant unmet need: >\$1 billion peak sales in U.S.<sup>1</sup>**
  - 90-day mortality rate of ~30%<sup>2</sup>
  - No approved therapy for AH

<sup>1</sup> Market Research – ClearView Analysis 2023

<sup>2</sup> Hughes E, Hopkins LJ, Parker R. 2018. *PLOS ONE*, 13(2): e0192393

# Appendix

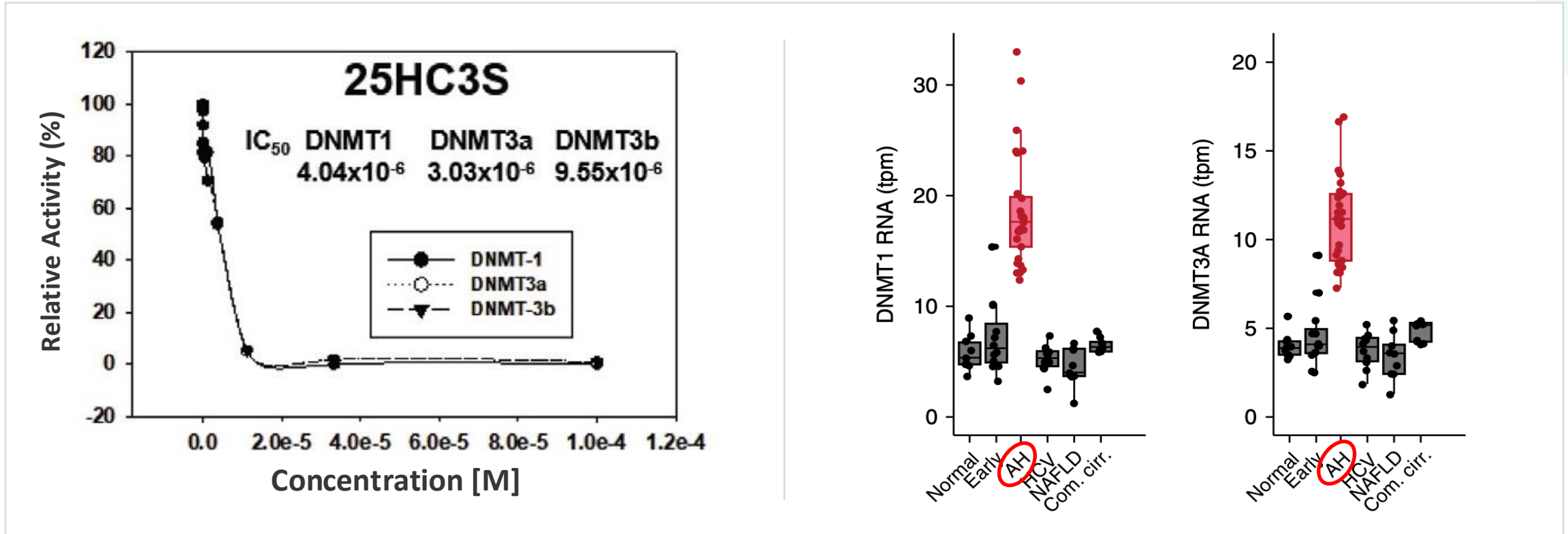
# Mechanism of Action Leverages Epigenetics to Impact Disease



- 1 Epigenetic Dysregulation in AH Patients**  
Aberrant DNA hypermethylation is associated with many diseases including severe AH
- 2 Epigenetic Regulators Modulate Gene Expression**  
DNA methyltransferases (DNMTs) are one such regulator that add methyl groups to certain regions of DNA, generally reducing gene expression
- 3 Larsucosterol Inhibits DNMTs**  
By inhibiting DNMTs (1, 3a, & 3b), larsucosterol reduces DNA hypermethylation, which modulates important cell signaling pathways

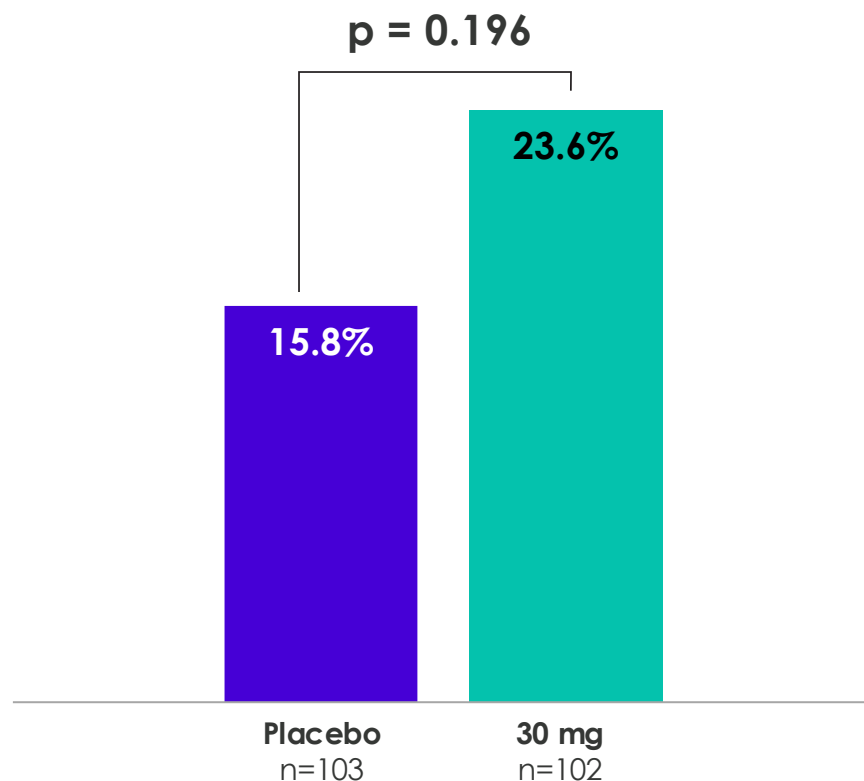
# Inhibition of DNMT-1, 3a & 3b Aligns with AH

Liver samples from patients with severe AH have increased expression of DNMT-1 & 3a

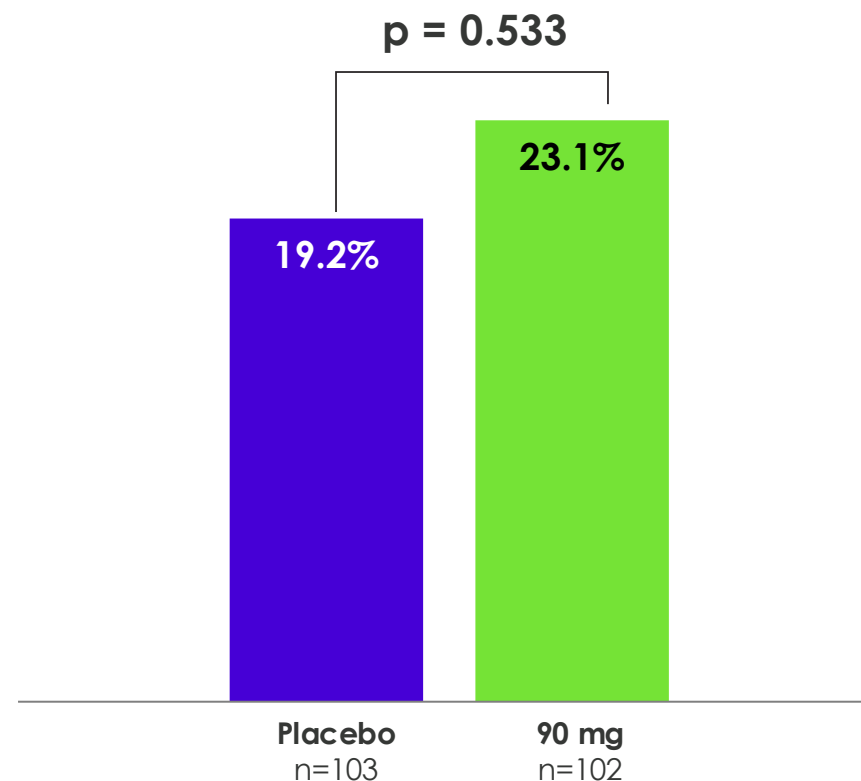


# Numerical Improvement in Transplant-free Survival (TFS) – Global (ITT)

Win Probability<sup>1,2</sup> at 90 Days  
30 mg Larsucosterol vs. Placebo



Win Probability<sup>1,2</sup> at 90 Days  
90 mg Larsucosterol vs. Placebo



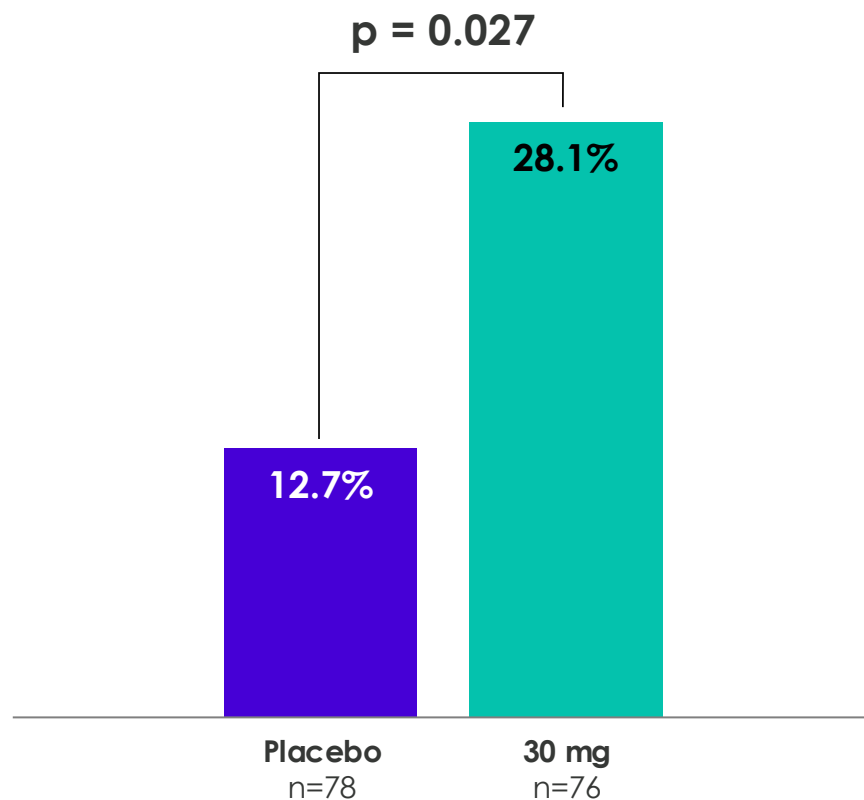
<sup>1</sup> Primary endpoint was analyzed using a hierarchical assessment of patient outcomes to calculate a win probability for each of the 30 mg and 90 mg doses of larsucosterol compared with placebo. Win probability was calculated on the hierarchy of alive and transplant-free being superior to transplant and death, and transplant being superior to death. Comparisons of the same outcome were included in the denominator as ties.

<sup>2</sup> Intent-to-treat (ITT) includes 5 patients with missing 90-day outcome data. The analyses were adjusted by the method of multiple imputations to account for these subjects.

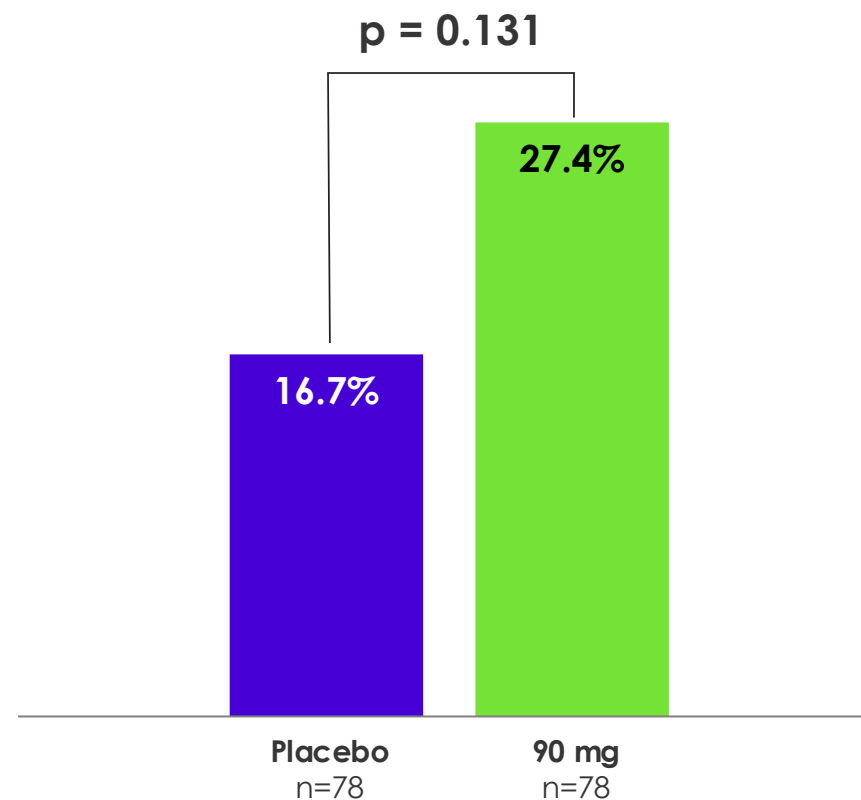


## TFS – U.S. Patients (ITT)

Win Probability<sup>1,2</sup> at 90 Days  
30 mg Larsucosterol vs. Placebo



Win Probability<sup>1,2</sup> at 90 Days  
90 mg Larsucosterol vs. Placebo



<sup>1</sup> Primary endpoint was analyzed using a hierarchical assessment of patient outcomes to calculate a win probability for each of the 30 mg and 90 mg doses of larsucosterol compared with standard of care. Win probability was calculated on the hierarchy of alive and transplant-free being superior to transplant and death, and transplant being superior to death. Comparisons of the same outcome were included in the denominator as ties.

<sup>2</sup> Intent-to-treat (ITT) includes 5 patients with missing 90-day outcome data. The analyses were adjusted by the method of multiple imputations to account for these subjects.

# AHFIRM Results by Region

	Placebo	Larsucosterol 30 mg	Larsucosterol 90 mg
<b>France/Belgium:</b>			
Number of subjects with 90-day outcome data	7	11	8
Deaths (%)	1 (14.3%)	4 (36.4%)	4 (50.0%)
Transplants (%)	0	1 (9.1%)	1 (12.5%)
Alive & Transplant-free (%)	6 (85.7%)	6 (54.6%)	3 (37.5%)
<b>UK:</b>			
Number of subjects with 90-day outcome data	1	5	2
Deaths (%)	1 (100.0%)	0	1 (50.0%)
Transplants (%)	0	0	0
Alive & Transplant-free (%)	0	5 (100.0%)	1 (50.0%)
<b>Australia:</b>			
Number of subjects with 90-day outcome data	17	10	14
Deaths (%)	2 (11.8%)	3 (30.0%)	2 (14.3%)
Transplants (%)	0	0	0
Alive & Transplant-free (%)	15 (88.2%)	7 (70.0%)	12 (85.7%)
<b>U.S.<sup>1</sup>:</b>			
Number of subjects with 90-day outcome data	77	73	77
Deaths (%)	21 (27.3%)	8 (11.0%)	10 (13.0%)
Transplants (%)	4 (5.2%)	5 (6.8%)	8 (10.4%)
Alive & Transplant-free (%)	52 (67.5%)	60 (82.2%)	59 (76.6%)

<sup>1</sup> Excludes 5 subjects with missing 90-day outcome data.