NASDAQ: **MEIP**

Needham Healthcare Conference

April 4, 2017

Forward-Looking Statements

These slides and the accompanying oral presentation contain forward-looking statements. Actual events or results may differ materially from those projected in any of such statements. Additional information concerning factors that may cause actual events or results to differ from those projected is contained in MEI Pharma's most recent annual report on Form 10-K and quarterly reports on Form 10-Q, as well as other subsequent filings with the SEC.

MEI Pharma: Leveraging Core Strength in Oncology Drug Development

Pracinostat Late-stage HDAC inhibitor partnered with Helsinn

- AML: Global Phase 3 study recruiting sites
- MDS: Phase 2 dose-optimization study significantly increases market potential

ME-344 Investigator-sponsored study of mitochondrial inhibitor + Avastin® in HER2-negative breast cancer ongoing

ME-401 Highly differentiated PI3k delta inhibitor with potential for wide therapeutic window & versatility for combo treatments

- Interim data in CLL and FL expected this year

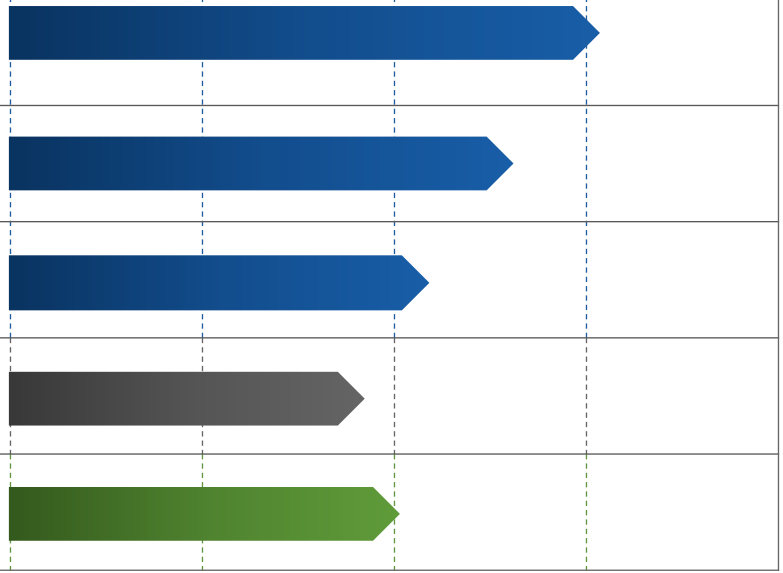
Strong financials $55.2M in cash as of 12/31/16 provides runway through at least FY2018

Management team Track record of creating value for acquired assets

DATA FROM TWO WHOLLY OWNED PROGRAMS ANTICIPATED IN 2017

Pipeline Targets Unlocked Potential in Multiple Drug Pathways

DRUG CANDIDATE	INDICATION / COMBINATION	PRE-CLINICAL	PHASE I	PHASE II	PHASE III
Pracinostat* HDAC Inhibitor	**Acute Myeloid Leukemia** Newly diagnosed, unfit for intensive chemotherapy or elderly over 75 *Azacitidine (Vidaza®)*				
	Myelodysplastic Syndrome High & very high risk *Azacitidine (Vidaza®)*				
	Myelofibrosis** Front line & relapsed/refractory *Ruxolitinib (Jakafi®)*				
ME-401 PI3K Delta Inhibitor	**CLL & Follicular Lymphoma** Relapsed/refractory *Single agent*				
ME-344 Mitochondrial Inhibitor	**HER2-Negative Breast**** Treatment-naïve, early stage *Bevacizumab (Avastin®)*				



** Partnered with Helsinn Healthcare, SA ** Investigator-sponsored studies*

Pracinostat: Breakthrough Therapy Designation* Supported by Phase 2 Data

Phase 2 study of Pracinostat + azacitidine in elderly patients with newly diagnosed AML, not candidates for induction chemotherapy

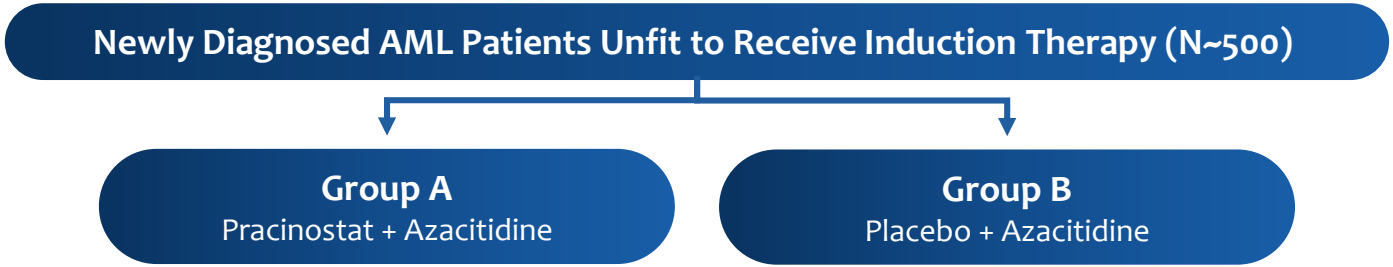
	PRACINOSTAT + AZACITIDINE (N=50)
CR rate	42%
60-day mortality rate	10%
Duration of Response (CR/CRi)	**17.2 months** (95%CI: 10.9-21.5)
1-year survival rate	62%
Median overall survival	**19.1 months** (95%CI: 10.7-26.5)

- Pracinostat + azacitidine was generally well tolerated in this study
- Most common grade 3/4 treatment-emergent adverse events in ≥25% of patients included febrile neutropenia, thrombocytopenia, anemia and fatigue

** Breakthrough Therapy Designation granted by the U.S. Food and Drug Administration (FDA) for the investigational drug Pracinostat in combination with azacitidine for the treatment of patients with newly diagnosed AML who are ≥75 years of age or unfit for intensive chemotherapy*

Pracinostat is an investigational agent not approved for commercial use in the U.S.

Pracinostat Phase III Study Design



Primary Objective:

- To compare the overall survival (OS) of Pracinostat in combination with azacitidine versus placebo in combination with azacitidine

Inclusion Criteria:

- Newly diagnosed AML patients who are ≥75 years of age or unfit for intensive induction chemotherapy

Helsinn an Ideal Partner to Advance Pracinostat

- Combines MEI Pharma's clinical development expertise in oncology with Helsinn's operational strengths and commercial expertise with hematologic oncologists
- Resulted in $20M in near-term payments, up to $444M in future milestones + royalties
- Helsinn responsible for funding global development and commercialization for Pracinostat currently being evaluated in AML and other hematologic diseases
- Share cost of Phase II study to explore optimal dosing regimen of the investigational agent Pracinostat + azacitidine in high and very high risk MDS

Pracinostat Opportunity in MDS

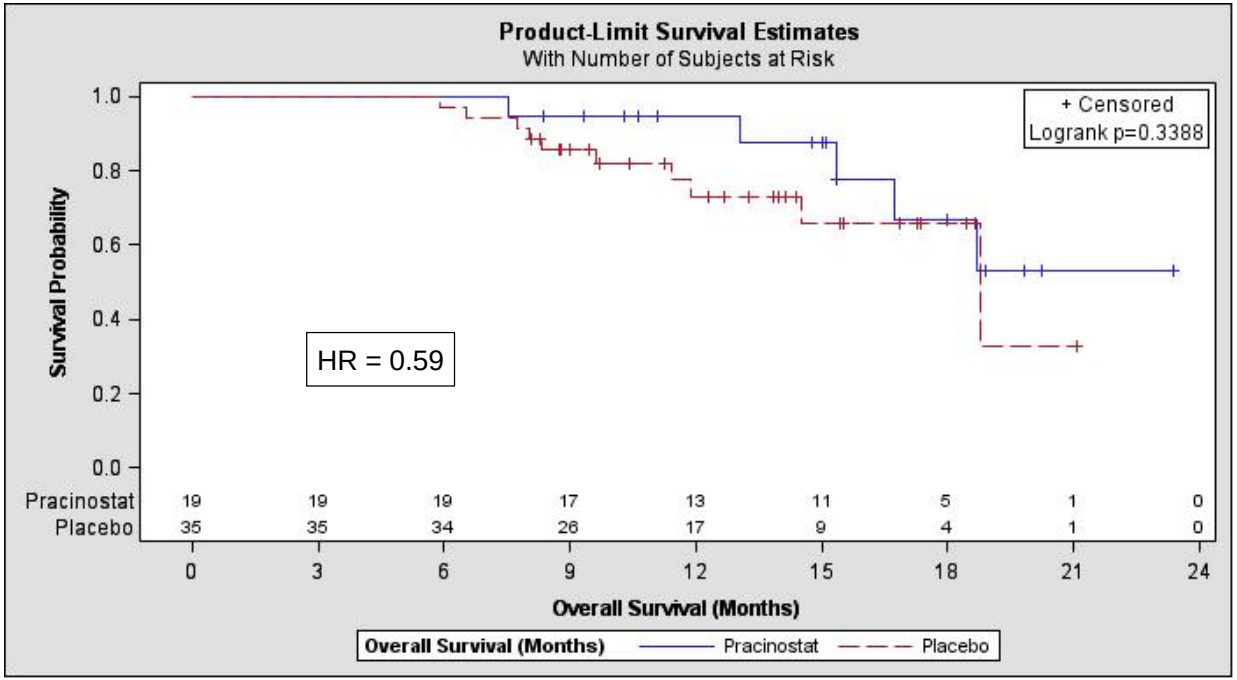
- Pilot study of Pracinostat + azacitidine in higher risk MDS demonstrated CR/CRi rate of 89%[1]
  - Combination generally well-tolerated in study; most frequent side effects were nausea & fatigue
- Data from randomized Phase 2 study of Pracinostat + azacitidine suggest higher discontinuation rate in Pracinostat group limited overall efficacy of combination
- However, analysis of patients who received at least 4 cycles of therapy in the Phase 2 study showed improvement over azacitidine alone

Goal for Future Studies:

- Reduce discontinuation rate and maximize number of treatment cycles
  - Optimize dosing
  - Focus on higher risk patient population

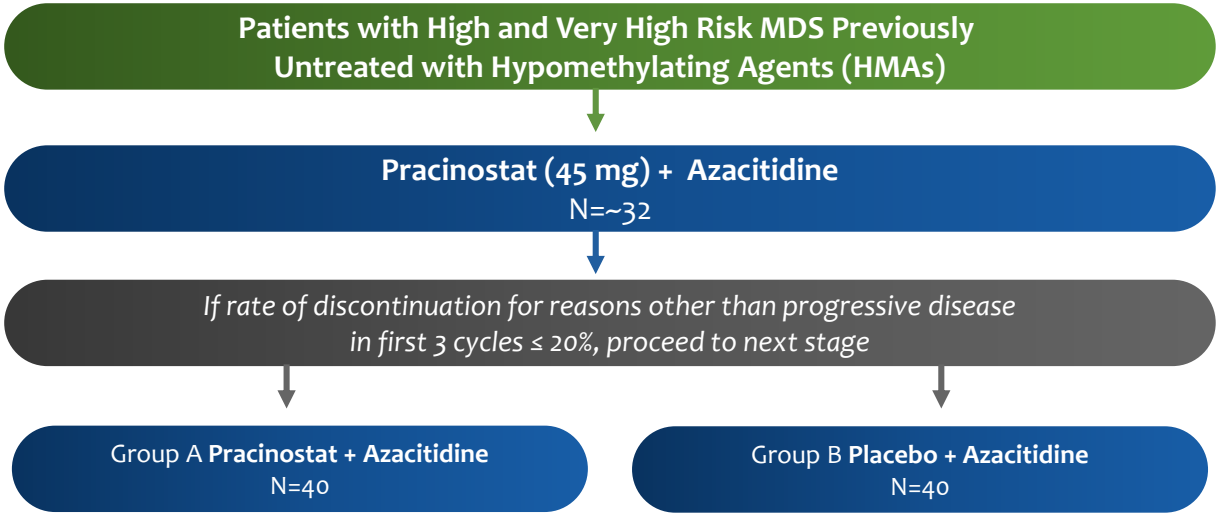
[1] Quintas-Cardama et al. ASH 2012: 3821

Phase 2 Study in MDS: Evaluation of Overall Survival for Patients on Study for 4 or More Cycles



Phase 2 Dose-Optimization Study in MDS

Expected to initiate in June 2017



- Two-stage study: 12-15 sites in stage 1; approximately 25 sites in stage 2
- Primary objectives: Safety and tolerability; overall response rate (ORR)

ME-401: A Highly Differentiated PI3K Delta Inhibitor

ATTRIBUTES

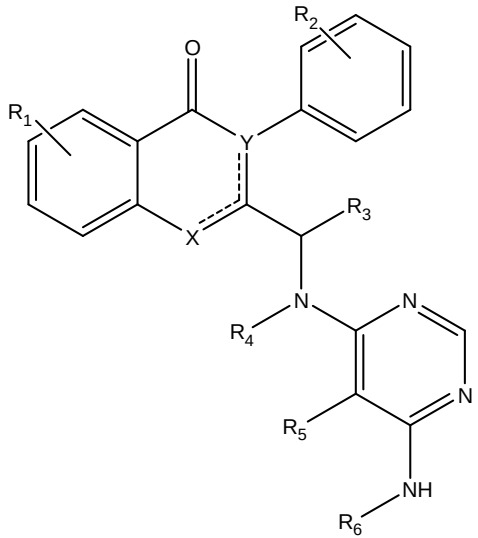
- Distinct chemical structure leads to differentiated binding and saturation of drug target
- Potential for wide therapeutic window and versatility for combination approaches

COMPARED TO ZYDELIG

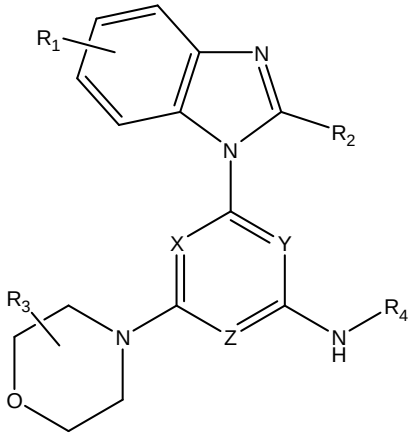
- >30-fold improvement in on-target binding affinity
- 15-fold improvement in therapeutic window based on exposure margin
- 60mg once/day vs. 150mg twice/day

ME-401: New Structural Class of PI3K Delta Inhibitor

Zydelig, Duvelisib & TG-1202



ME-401



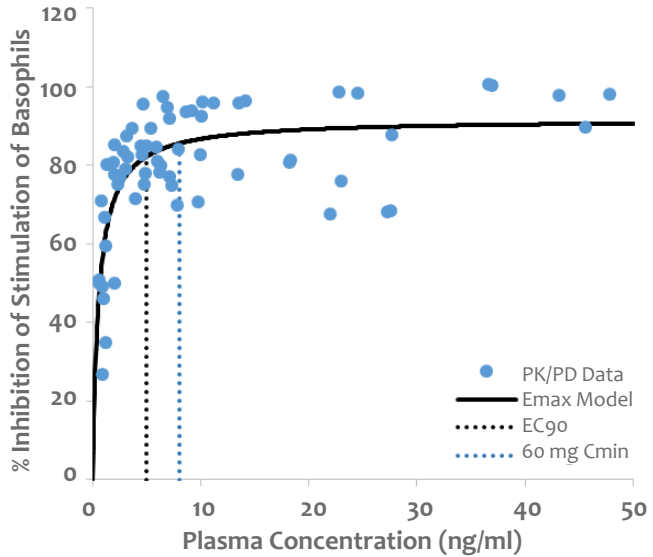
ME-401: Differentiated Biological Activity & Efficiency

- Why such a difference between activity on whole cells vs purified enzyme?
- Answer may be due to a combination of binding kinetics and drug distribution differences

	IC_{50} for PI3K Delta Inhibition	Inhibition of Basophil Activation in Healthy Volunteers EC_{50}
ME-401	< 5 nM	1.0 nM
Zydelig	< 8 nM	150 nM

ME-401: Biomarker for Inhibition of PI3K Delta Demonstrates High Biologic Potency

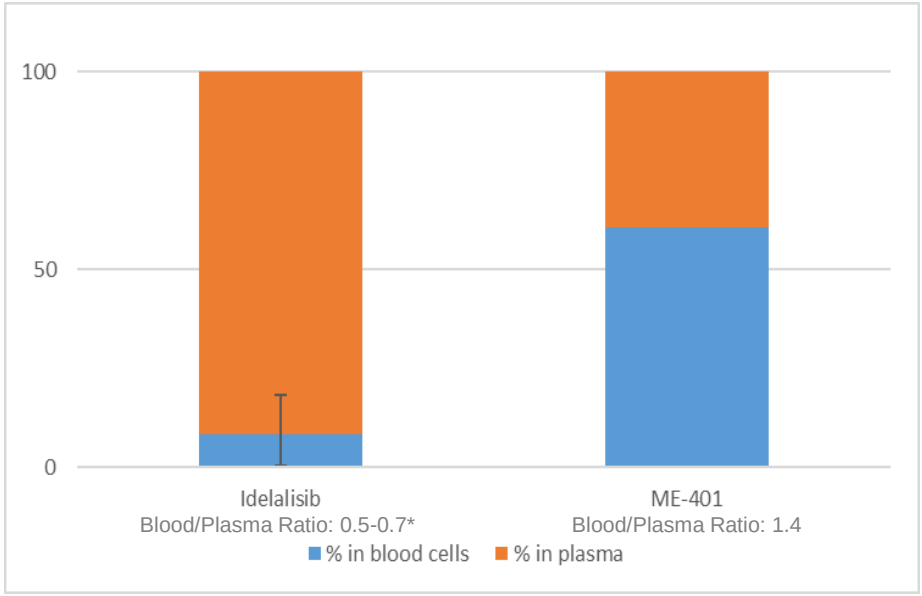
Inhibition of basophil activation by FcεR1 antibody



- PK/PD data was fit to E_{max} model
  - EC50 = 0.6 ng/ml (1.0 nM)
  - EC90 = 5.2 ng/ml (8.9 nM)
- Daily dosing of $\geq$ 60 mg expected to afford continuous plasma concentrations above the EC_{90}

ME-401: Superior Drug Distribution to Blood Cells

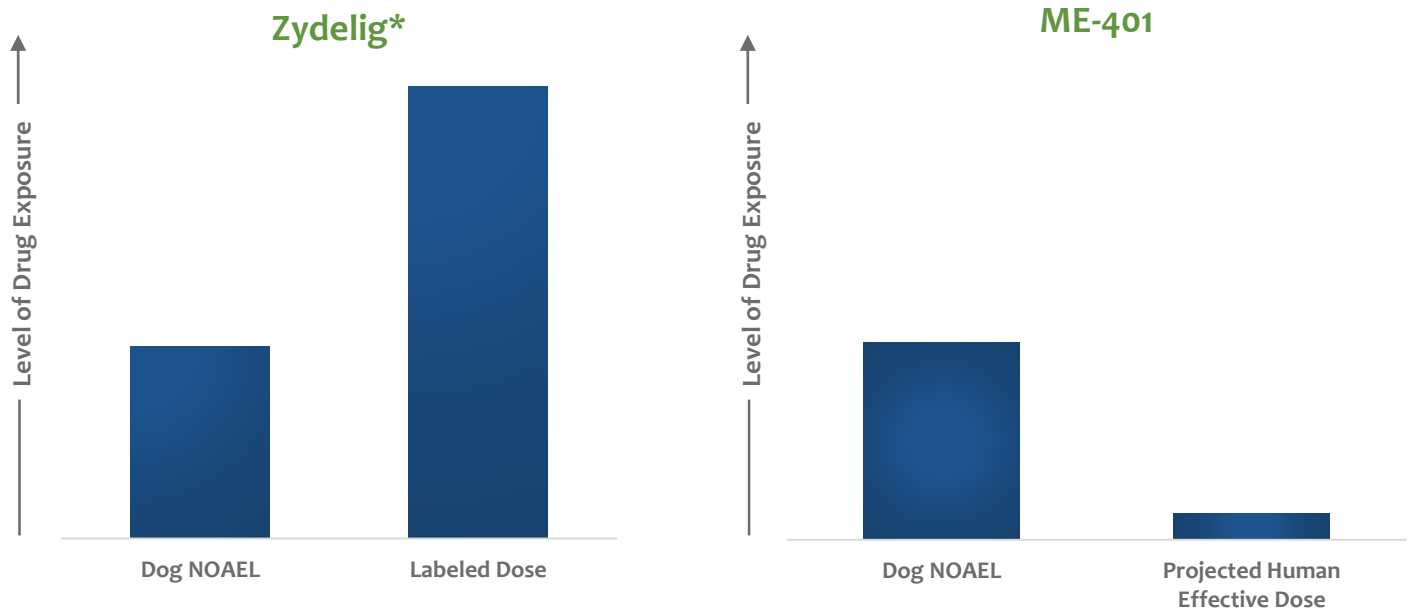
% of drug in plasma vs blood cells based on blood/plasma ratios



** Sources: Product insert, Blood 2013 122:5570*

ME-401: Pre-Clinical & Clinical Data Suggest Wide Therapeutic Window

Exposure in humans vs. No Observed Adverse Effect Level (NOAEL) in dogs



** Source: CHMP assessment report*

The PI3K Delta Opportunity

The Bar for Success in Follicular Lymphoma

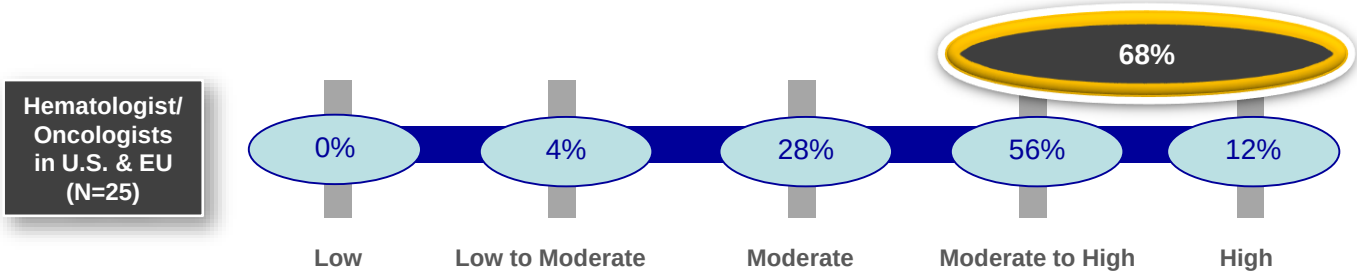
Zydelig-like Efficacy
Overall response ≥ 50%
Complete response ≥ 5%
Median duration ≥ 12 months

+

Superior Safety and Tolerability
<10% Grade 3-4 non hematologic tox
<30% Grade 3-4 hematologic tox

Current Role of PI3K Delta in Follicular Lymphoma*

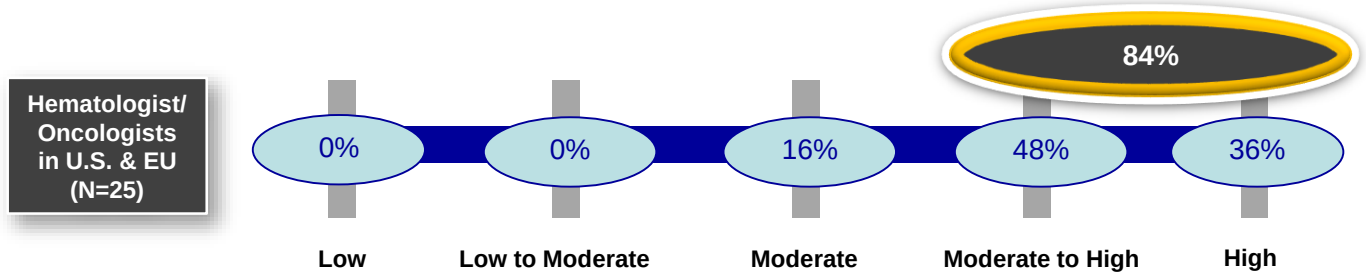
Importance of idelalisib (Zydelig®) in treating/managing relapsed/refractory follicular lymphoma patients



** Source: MEI Pharma Primary Market Research*

Potential for Safer & Efficacious PI3K Delta in Follicular Lymphoma*

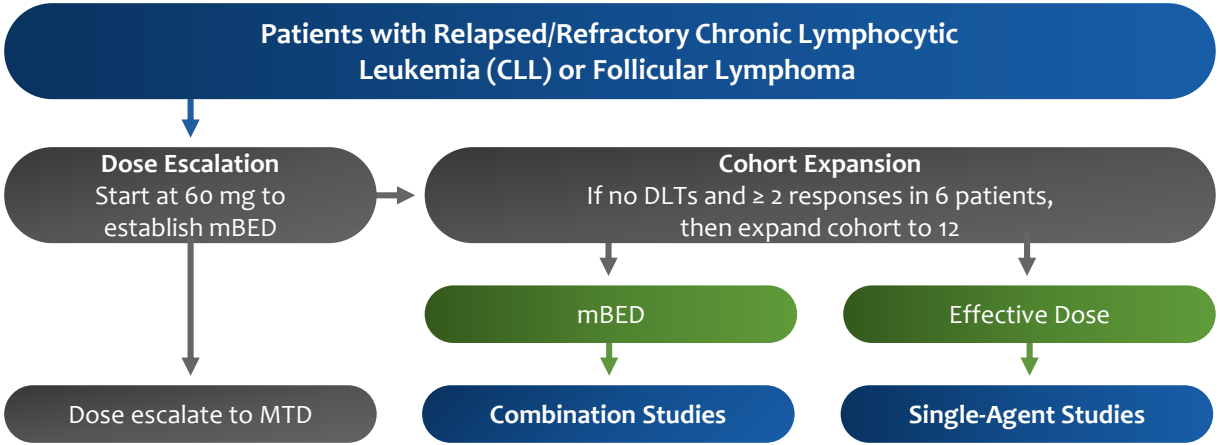
Viability of Product X for relapsed/refractory follicular lymphoma patients if available with the profile presented



** Source: MEI Pharma Primary Market Research*

ME-401: Phase Ib Dose-Escalation Study

Preliminary safety & efficacy data expected in June 2017



Key objectives:

- Minimum Biologically Effective Dose (mBED)
- Effective Dose
- Maximum Tolerated Dose (MTD)

Study Chair: Memorial Sloan Kettering Cancer Center

Key eligibility:

- Relapsed/refractory CLL or follicular lymphoma
- No prior therapy w/ PI3K delta inhibitors
- No prior therapy w/ BTK inhibitors unless intolerant of BTK therapy

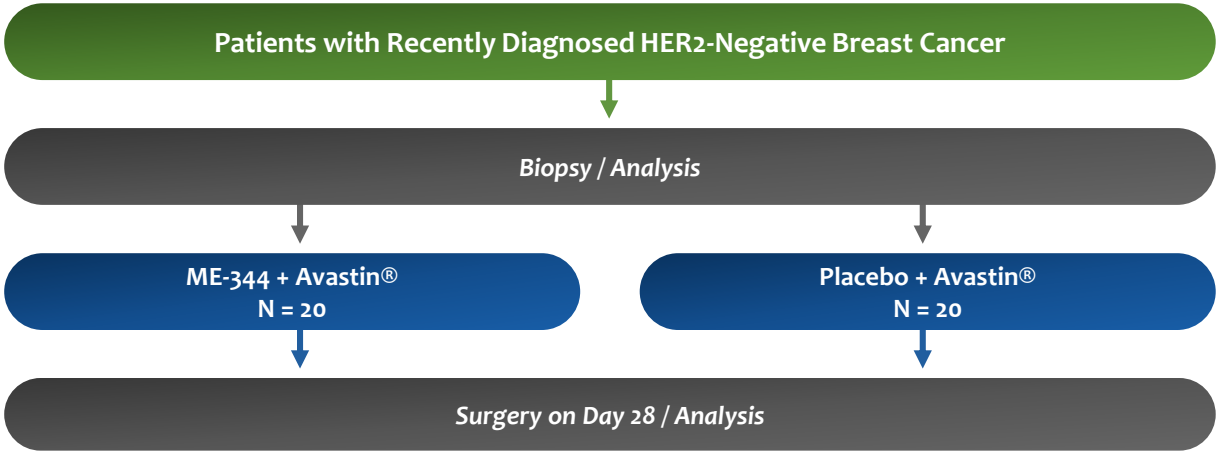
ME-344 in Phase 1 for HER2-negative breast cancer

- Mechanism of action directly targets mitochondrial OXPHOS complex I[1], resulting in **rapid loss of cellular energy (ATP)**
- **Evidence of single agent activity** in Phase I dose-escalation study in refractory solid tumors[2]
- **Exciting pre-clinical data** demonstrating interplay between tumor cell glycolysis and mitochondrial metabolism in combination with VEGF inhibitors[3,4]
- Investigator-sponsored study in combination with Avastin® in HER2- breast cancer **now actively dosing patients**

[1] Lim et al. Am J Cancer Res. 2015;5(2):689-701 [2] Bendell et al. Cancer. 2015 Apr 1;121(7):1056-63 [3] Manevich et al. J Pharmacol Exp Ther. 2016 Aug;358(2):199-208 [4] Navarro et al. Cell Rep. 2016 Jun 21;15(12):2705-18

ME-344: Investigator-Sponsored Study

Data expected in December 2017



- Prospective, randomized study being conducted at 6 sites
- Primary objective: Mitochondrial switch changes from baseline
- Secondary objectives: Evidence of biologic anti-tumor activity and safety
- Sponsored by Spanish National Cancer Research Centre

Intellectual Property

Pracinostat

- 4 issued U.S. and 77 issued foreign patents
  - 2 U.S. and 8 foreign applications pending
- Composition of matter to May 2028 in U.S.
  - **May 2033** with up to 5 years patent term restoration in U.S.

ME-344

- 3 issued U.S. and 18 issued foreign patents
  - 3 U.S. and 7 foreign applications pending
- Composition of matter to March 2027 in U.S.
  - **March 2032** with up to 5 years of patent term restoration in U.S.

ME-401 (formerly PWT143)

- 2 issued U.S. patent
  - 1 U.S. and 21 foreign applications pending
- Composition of matter to **December 2032** in U.S., excluding patent term restoration

Leadership Team with Rich History in Drug Development

EXECUTIVE MANAGEMENT

Daniel Gold, PhD
President & Chief Executive Officer
Former Chief Scientific Officer & Founder, Favrille

Robert Mass, MD
Chief Medical Officer
Former Head of Medical Affairs, BioOncology, Genentech

Brian Drazba
Chief Financial Officer
Former Chief Financial Officer, Heron Therapeutics

David Urso, JD
SVP, Corporate Development & General Counsel
Former Principal, Forward Ventures / COO, Tioga Pharmaceuticals

Karen Potts, PhD
SVP, Regulatory Affairs
Former SVP of Regulatory Affairs, Trius Therapeutics

Richard Ghalie, MD
SVP, Clinical Development
Former Chief Medical Officer, Denovo, HemaQuest, Novalar & Favrille

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President & CEO, MEI Pharma

Thomas Reynolds, MD, PhD
Former Chief Medical Officer, Seattle Genetics

William Rueckert
Former Chairman, Novogen Limited

On Course to Deliver on Milestones in 2017

Pracinostat

- ✓ $5 million milestone payment from Helsinn
- Initiation of Phase III study with azacitidine in AML (Helsinn)
- Initiation of Phase II dose-optimization study with azacitidine in MDS (June)
- Completion of enrollment in stage 1 of dose-optimization study in MDS (December)

ME-401

- Safety & efficacy data from first cohort of Phase Ib study in CLL & follicular lymphoma (June)
- Safety & efficacy data from expansion cohort, mBED/effective dose in Phase 1b study (December)

ME-344

- Data from investigator-sponsored study with Avastin® in HER2-negative breast cancer (December)

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