Prepared for Yale Innovation Summit
May 2021
Microbial Virulence Factors: Drivers of Inflammatory Disorders

- Microbial virulence factors induce GI epithelial barrier disruption ("leaky gut") in numerous chronic inflammatory disorders
- Artizan uniquely identifies, characterizes and inhibits microbial virulence factors
- Susceptible person + “pathobiont” = foundation for inflammatory disorder

Leaky gut disease burden:
- Crohn’s & Ulcerative Colitis (IBD)
- Celiac Disease
- NASH, NAFLD
- Diabetes, Obesity
- Metabolic Disorders
- Parkinson’s Disease
World-Class Founding Scientists & Leadership

Founders:

- Dr. Richard Flavell, Yale Immunobiology, HHMI Investigator
- Dr. Noah Palm, Yale Immunobiology
- Dr. Marcel de Zoete, Utrecht University (Netherlands)

Board of Directors:

- Dr. Christy Shaffer (Chair), Partner, Hatteras Venture Partners
- Dr. Jon Soderstrom, Managing Director, Yale University OCR
- Dr. Holden Thorp, Editor-in-Chief of Science and the Science family of journals
- Dr. Seth Rudnick, Canaan Partners, Biogen, Ortho Biotech, Cytotherapeutics
- Dr. Donnie McGrath, Chief of Corporate Strategy & Business Development, Biohaven Pharmaceuticals
- James Rosen, CEO, Artizan Biosciences

Artizan’s Mission is to restore lives disrupted by inflammatory disease through innovation and advancement of microbiota-targeted therapies
Artizan Research: Deciphering Microbiome-IBD Causality

Pathobiont Mechanisms and Artizan Solutions

1. Pathobiont-secreted toxins disrupt epithelial junctions, inducing leaky gut.

2. Toxin inhibitor neutralizes junction disruption, restores epithelial barrier integrity

3. Healthy epithelium with intact cell-cell junctions

IBD

Artizan Therapeutic Effect
Strain-Level Investigation Reveals Lead Pathobionts

Pathobiont #1 is a Strain of a Common Commensal, with a Virulence Factor

(+) Virulence Factor Disrupts Epithelial Monolayers

Strain (+) Virulence Factor Causes Colitis in Diverse Models

Virulence Factor is Druggable

Lipocalin 2 (Lcn2) = marker of intestinal inflammation

n=5-6 mice/group
****p<0.0001

Lcn2 (pg/ug total protein)

Fecal - D4 values

Vehicle (DMSO)
Prinomastat
OH-CGS-23270A

0
20
40
60
80
Artizan’s Approach Links to Patient Clinical Evidence

Proprietary “IBD-BIOME” sample collection
- 500 donors across 7 U.S. sites
- Longitudinal design: baseline, 6, 12, 18 mos., +flare
- 300 IBD patients with medical records
- 200 healthy controls (100 cohabitants + 100 random)
- Study completed; >90% participation through 18 mos.
  - >97% through 12 months; subsequent COVID impact
- >1,500 samples collected – highly valuable resource

Crohn’s & Colitis IBD Plexus
- Access to >3,200 adult IBD patients records and samples
- Genomics & molecular data
- Medical records
- Artizan is the first biotech company to gain access to this resource
Near-Term Value Creation

Declare Development Candidate by Q4’21
- Current leads selective and have nanomolar potency in vitro
- Exploring cross-organism activity
- Submit IND by Q4’22

Additional key activities through 4Q’21:
- Confirm host targets for toxic factors produced by Pathobionts #2 and #3
- Select primary chemical series for progression of Pathobiont #2 inhibitor program
- Mature computational model with Pathobiont #2 toxin and lead inhibitors
- Test lead Pathobiont #2 inhibitors for efficacy in animal models of intestinal inflammation
Artizan Biosciences
Pioneering a new class of medicines to counteract pathogenic virulence factors in the human gut

Thank you