PULMATRIX Corporate Overview

I NASDAQ: PULM

Safe Harbor

This presentation contains forward-looking statements. All statements other than statements of historical fact contained herein, including statements regarding our business plans or strategies, projected or anticipated benefits or other consequences of our plans or strategies, projected or anticipated benefits from acquisitions to be made by us, or projections involving anticipated revenues, earnings or other aspects of our operating results, are forward-looking statements. Words such as "anticipates," "assumes," "believes," "can," "could," "estimates," "expects," "forecasts," "guides," "intends," "is confident that," "may," "plans," "seeks," "projects," "targets," and "would," and their opposites and similar expressions, as well as statements in future tense, are intended to identify forward-looking statements. Forward-looking statements should not be read as a guarantee of future performance or results and may not be accurate indications of when such performance or results will actually be achieved. Forward-looking statements are based on information we have when those statements are made or our management's good faith belief as of that time with respect to future events and are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward-looking statements. A discussion of these and other factors, including risks and uncertainties with respect to Pulmatrix, Inc. (the "Company"), is set forth in the Company's filings with the Securities and Exchange Commission ("SEC"), including the Company's most recently filed Annual Report on Form 10-K. Investors and security holders are urged to read these documents free of charge on the SEC's website at http://www.sec.gov. Forward-looking statements contained in this presentation are made as of this date, and the Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, or otherwise.

This presentation contains statistical and market data that we obtained from industry publications, reports generated by third parties, third-party studies and public filings. Although we believe that the publications, reports, studies and filings are reliable as of the date of this presentation, we have not independently verified such statistical or market data.

CAUTION: We have not received approval from the FDA, or any other regulatory entity, to market our therapeutic candidates in the United States or in any other jurisdictions. Our therapeutic candidates, including Pulmazole, PUR1800, and PUR0200 are classified by the FDA as investigational drugs and are limited by Federal (or United States) law to investigational use only and will require additional studies to make definitive conclusions and claims about such candidates' safety or efficacy.

Transforming Therapies Through iSPERSE™ Enabled Drug Delivery

Pulmatrix's proprietary iSPERSE platform, with an initial focus on respiratory disease, optimizes pharmacokinetics and pharmacology to develop, commercialize and deliver transformational medicines to patients globally

Pulmazole Phase 2 Program in ABPA

PUR1800 Phase 1b Program in AECOPD

iSPERSE Strategic Partnerships

Source: D Singh et al., Br J Clin Pharmacol. 2018, 84(9):2097-2105;

Source: ACAAI – 2018 – A Phase 1/1B Study of an Inhaled Formulation of Itraconazole in Healthy Volunteers and Asthmatics; Study Poster Presented at ACAAI in 2018, www.pulmatrix.com

Investment Highlights

- Phase 2 ABPA and Phase 1b AECOPD programs with potential combined peak U.S. revenue potential exceeding $3.5B*
- Expanding global opportunity with Cipla partnership on Pulmazole lead program
- Proprietary iSPERSE technology to optimize pharmacokinetics and pharmacology in respiratory and non-respiratory therapeutics
- A scalable platform with application across drug classes and dry-powder delivery devices creates broad potential for strategic partnerships
- Intellectual property portfolio well into 2030's

* Source: Physician Interviews and Payer Interviews; ClearView Health Partners Analysis.

Experienced Leadership Team With Experience to Execute and Deliver Value

Management

Strong Background in Product Development & Commercialization

Ted Raad
CEO & Director

Bill Duke
CFO

Dr. Rusty Clayton
Head of Clinical Development

Michael Lipp, PhD
Chemistry Manufacturing & Controls Strategy

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Board of Directors

Diverse Collective Experience from Leading Respiratory Companies

sunovion genzyme NOVARTIS valeritas Alkermes

Mark Iwicki
Chairman

kala PHARMACEUTICALS

Amit Munshi
Director

ARENA PHARMACEUTICALS

Matthew Sherman
Director

ACCELERON

Michael Higgins
Director

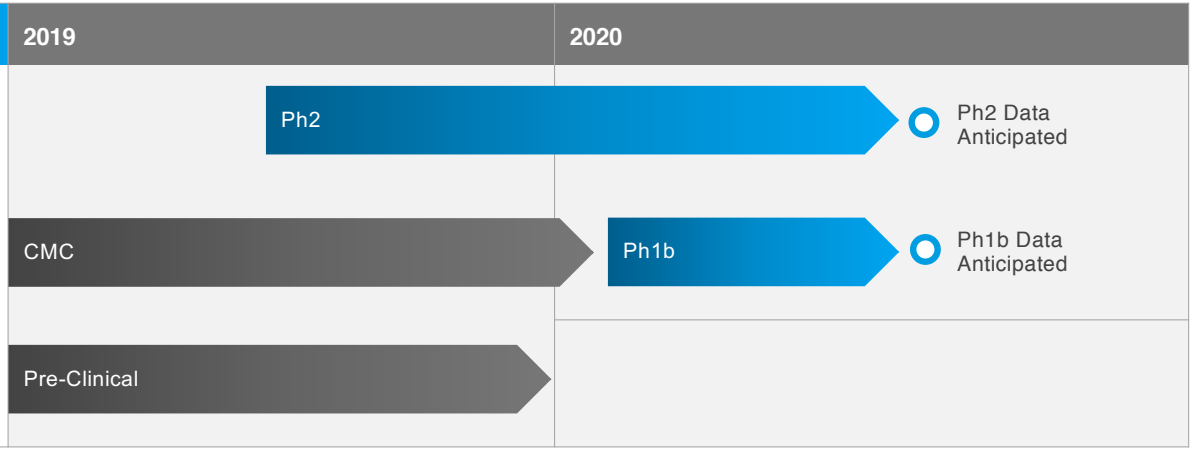
Ironwood

Steve Gillis, PhD
Director

ARCH Venture Partners

Robust Pipeline with Projected Significant Value Catalysts*

Product Pipeline	Indication
Pulmazole *Anti-fungal*	Allergic Bronchopulmonary Aspergillosis (ABPA) in Patients with Asthma
PUR1800 *NSKI*	Acute Exacerbations of COPD (AECOPD)
PUR5700 *NSKI*	Idiopathic Pulmonary Fibrosis (IPF)



iSPERSE	Partner funded R&D collaborations leveraging iSPERSE to enable new therapies and create opportunities for partnership

01 Global Pulmazole partnership and revenue share with Cipla Technologies

02 R&D collaboration discussions underway regarding PUR5700

03 Additional 505(b)2 iSPERSE enabled pipeline opportunities under consideration

04 Multiple parties engaged in potential iSPERSE technology driven partnerships

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* Estimated Milestones

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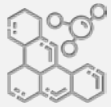
iSPERSE

Small Dense and Dispersible

iSPERSE Enables Product Development Not Possible With Conventional Technologies



IMPROVING DELIVERY

Small molecules, biologics and macromolecules with challenging physical and chemical attributes

IMPROVING DOSING

Targeted delivery to provide efficacious doses

IMPROVING SAFETY PROFILES

Control of pulmonary and systemic exposure

Sources: D Singh et al., Br J Clin Pharmacol. 2018, 84(9):2097-2105;; Perry, J, et al., Br J Clin Pharmacol. 2019, 85(3):580-589; ACAAI – 2018 – A Phase 1/1B Study of an Inhaled Formulation of Itraconazole in Healthy Volunteers and Asthmatics; Study Poster Presented at ACAAI in 2018, www.pulmatrix.com

iSPERSE Platform

Small, dense & dispersible particles designed for highly efficient respiratory delivery

iSPERSE enables sick patients to get more effective doses

Potential iSPERSE Advantages

Can be used with a broad range of drugs, small molecule to biologic

Can be used with any device (e.g. metered-dose, reservoir, capsule or blister-based inhalers)

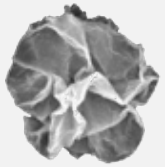
Requires low inspiratory flow for penetration deep into lung, based on high dispersibility

Can deliver large doses into lungs (tens of milligrams) with high delivery efficiency

Avoids first-pass effect and systemic side-effects with improved pharmacokinetics profile compared to oral delivery

Broad IP portfolio into 2030s

Evolution of Engineered Dry Powder Drug Delivery



Large Porous Particle (ARCUS®)

Small Porous Particle (PulmoSphere™)

1μm iSPERSE

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Sources: D Singh et al., Br J Clin Pharmacol. 2018, 84(9):2097-2105;; Perry, J, et al., Br J Clin Pharmacol. 2019, 85(3):580-589; ACAAI – 2018 – A Phase 1/1B Study of an Inhaled Formulation of Itraconazole in Healthy Volunteers and Asthmatics; Study Poster Presented at ACAAI in 2018, www.pulmatrix.com

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Pulmazole

Inhaled Antifungal

Inhaled Itraconazole to Treat Allergic Bronchopulmonary Aspergillosis (ABPA) in Patients with Asthma

Allergic Bronchopulmonary Aspergillosis (ABPA) in Patients with Asthma

Exaggerated response of the immune system to the fungus *Aspergillus* in patients with asthma and cystic fibrosis

~1.5% of adult patients with asthma (~300K U.S. / ~5MM Global) suffer from ABPA. ABPA causes airway inflammation, leading to lung damage and fibrosis.

Treatment focus

- Control of asthma symptoms
- Prevention and treatment of pulmonary exacerbations
- Reduction of pulmonary inflammation to prevent end-stage fibrotic disease

Treatments are limited to steroid and oral antifungal therapies

- Typical first line treatment is oral steroid therapy, followed by combination with oral antifungals, after insufficient treatment response with oral steroids

Healthy Lung

Diseased Lung

Untreated ABPA may result in pulmonary fibrosis, respiratory failure and potentially death.

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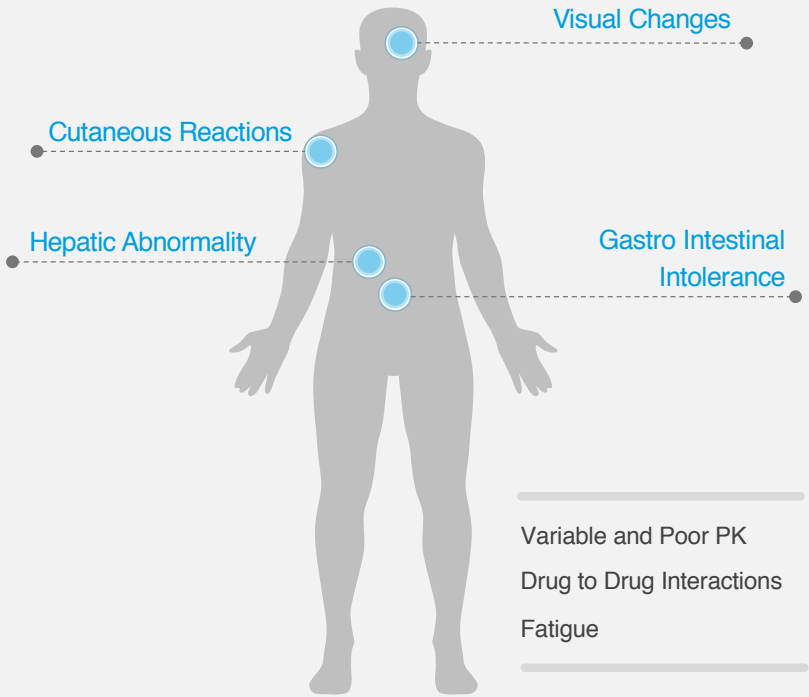
Shah. Allergy Asthma Immunol Res. 2016;8(4):282; Tracy, J Fungi 2016;2:17; Agarwal, Clinical & Experimental Allergy. 2013;43, 850-873; Patterson. Proc Am Thorac Soc. 2010;7:237; Physician Research: Clearview Analysis; Estimate of Adult ABPA Prevalence Based on Country-specific Studies.

Significant Unmet Need Exists in ABPA

Dose Limiting Side Effects of Oral Antifungal Therapy Reduce Clinical Utility



Variable and Poor PK

Drug to Drug Interactions

Fatigue

Significant Unmet Need Remains with Current Treatment Options in ABPA

~50% of ABPA patients have **inadequate response** to oral steroids alone

~20% of ABPA patients become **steroid dependent**

Long-term steroid use associated with **development of complications** including invasive aspergillosis

Antifungal agents are believed to **reduce fungal burden** (antigen induces inflammatory response)

Antifungal treatment **improves clinical outcomes** and can potentially enable a reduction in steroid burden

While the majority of antifungal use in ABPA is itraconazole, **overall antifungal use is limited** by safety/tolerability concerns

Wang. AMAC. 2010;54:2409. Denning. Clinical Infectious Diseases. 2002;34:563; Lestner. Clinical Infectious Diseases 2009; 49:928–30; Denning. Clinical and Experimental Dermatology. 2001;26:648; Greenberger P., B.R., Demain J, et. al., Allergic Bronchopulmonary Aspergillosis. J Allergy Clin Immunol Pract., 2015. 2(6): p. 703-708.; Physician Research: Clearview Analysis

Ph1/1b Data Highlights Potential to Improve Upon Oral Sporanox Known FEV_1, Safety and Tolerability Profile

Phase 1/1b : Safety, Tolerability & PK Study in Healthy Normal Volunteers and Patients with Asthma

Part 1: Single Ascending Dose (SAD)

Healthy Normal Volunteers (n=6/cohort): Optional 4th cohort of 35 mg

Pulmazole (5 mg) → **Pulmazole** (10 mg) → **Pulmazole** (25 mg) → **Pulmazole** (35 mg)

Part 2: Multiple Ascending Dose (MAD)

Healthy Normal Volunteers (n=5-6/cohort)

Pulmazole (10 mg) → **Pulmazole** (20 mg) → **Pulmazole** (35 mg)

Part 3: Single Dose Crossover

Patients with Asthma (n=16)

Sporanox® (200 mg; oral) → **Pulmazole** (20 mg)

Pulmazole (20 mg) → **Sporanox® (200 mg; oral)**

STUDY OBJECTIVES

Parts 1 and 2 SAD and MAD in HNV

- Safety and tolerability of Pulmazole administered up to 14 days

Part 3 Single Dose Crossover in Stable Patients with Asthma

- Safety and tolerability of Pulmazole administered as a single dose in patients with asthma
- Through measurement of itraconazole levels in sputum and plasma, compare lung exposure and plasma exposure of single dose Pulmazole 20mg vs. single dose oral Sporanox 200mg

Pulmazole: Potential to Change Standard of Care for ABPA

Ph1/1b study successfully met all endpoints

Phase 1/1b Part 1 & 2: SAD and MAD Key Results

Demonstrated safety and tolerability of Pulmazole administered up to 14 days

~ 100 - 400

Fold lower

Plasma exposure over 24 hours than expected with oral Sporanox

Phase 1/1b Part 3: Single Dose Crossover Pulmazole 20mg Versus Single Dose Sporanox 200mg Oral

~ 50

fold higher lung exposure

~ 85

fold lower plasma exposure

1/10th

of dose

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Source: ACAAI – 2018 – A Phase 1/1B Study of an Inhaled Formulation of Itraconazole in Healthy Volunteers and Asthmatics; Study Poster Presented at ACAAI in 2018, www.pulmatrix.com

Pulmazole Development Plan Builds Upon Clinical Precedent of Sporanox Improvement of FEV_1 in ABPA

Pulmazole is anticipated to improve upon Sporanox outcomes demonstrated in clinical literature

01

The NEW ENGLAND JOURNAL of MEDICINE

2000, Stevens et al.

Itraconazole **improved FEV_1** and decreased steroid use and total IgE in a randomized double-blind trial with 55 patients

02

Journal of Clinical Immunology

2003, Wark et al.

Itraconazole **improved FEV_1** , decreased total IgE and the exacerbation frequency in a randomized, double-blind trial with 29 patients

03

Expert Review of Respiratory Medicine

2018, Agarwal et al.

In acute stage treatment naive ABPA patients, **monotherapy itraconazole** is effective in considerable number of patients, including **improved FEV_1 within 6 weeks**, with **less side-effects** compared to prednisolone monotherapy

Three clinical studies demonstrated that Sporanox treatment in addition to standard of care improved both disease biomarkers and FEV_1

- Stevens and Wark studies support inclusion of oral Sporanox into current ABPA treatment guidelines (2016 IDSA) and were drivers behind the Pulmazole Ph2 and Ph2b/3 study designs
- Stevens, Wark and Agarwal studies showed significant improvement in FEV_1 and biomarkers for ABPA
- Pulmazole is expected to improve upon the known efficacy, safety and tolerability profile of oral Sporanox given the Ph1/1b results of ~50 fold higher lung exposure and ~85 fold lower plasma exposure than oral Sporanox at 1/10 the dose

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Source: Stevens. NEJM.2000;342(11):757; Wark. J Allergy Clin Immuno. 2003;111; 952; Agarwal Chest 2018; doi: 10.1016/j.chest.2018.01.005

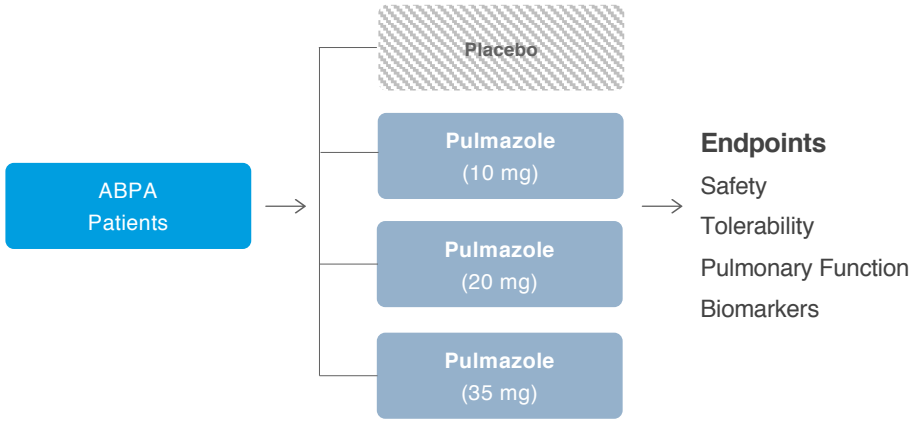
Phase 2 Study Underway is Expected to Support Proof of Mechanism in Patients with Asthma-ABPA

28-day safety, tolerability, pulmonary function and biomarker study in patients with asthma and ABPA

Randomized, double-blind, placebo controlled study (1:1 randomization; n = 16 per arm)

Patient Profile

Patients with Asthma (M/F, ages 18-65) with confirmed/stable Asthma and ABPA



Upcoming milestones

3Q-2019	4Q-2019	1Q-2020	2Q-2020	3Q-2020

Phase 2 Start

Phase 2 Data Anticipated

Primary Endpoint

- Safety & tolerability
- Pulmonary function (FEV_1)
- Biomarkers

Other Endpoints

- Plasma and sputum PK
- FEV_1
- Sputum and plasma eosinophils
- Serum IgE
- IgE and IgG (specific to A. fumigatus antigens) plasma concentrations
- Aspergillus burden in sputum
- Disease control (ACQ-6)
- FeNO

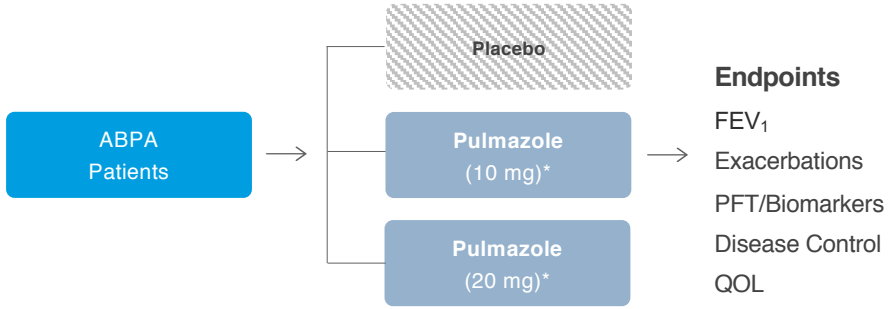
Phase 3 Trial Powered to Show FEV_1 Improvement

Potential Ph3 study design pending Ph2 results and FDA feedback

Randomized, double-blind, placebo controlled study
(n=120 per arm). 16 weeks dosing with 16 weeks follow-up.

Patient Profile Patients with moderate-to-severe asthma (M/F, ages 18-65) confirmed/stable Asthma and ABPA

* Final Ph3 doses to be determined following Ph2 and 6-month non-clinical toxicology



*Final dose selection to be determined

Primary Endpoint

- FEV_1

Secondary Endpoints

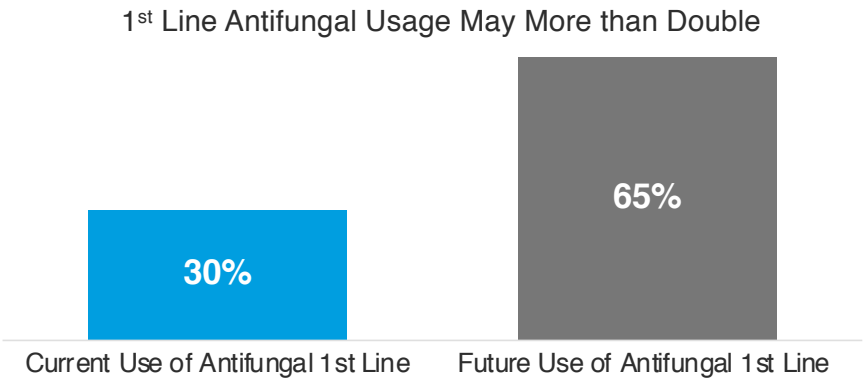
- Disease control (ACQ-6)
- Combined Asthma and ABPA exacerbations (frequency/timing)
- Steroid use

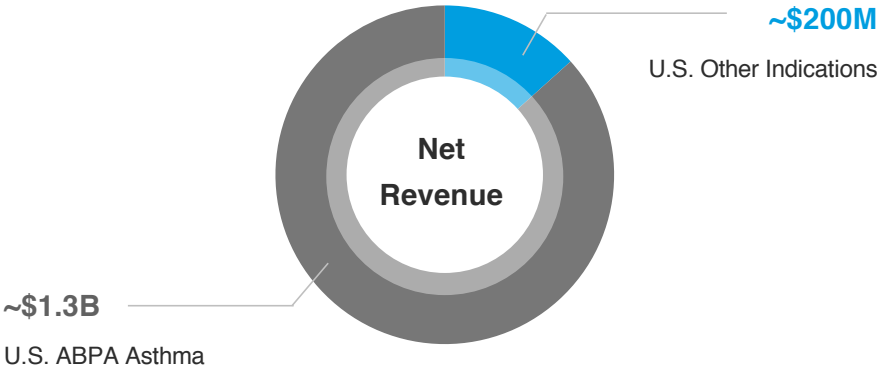
Biomarkers

- Sputum/plasma eosinophils
- Serum IgE
- IgE and IgG (specific to A. fumigatus antigens) plasma concentrations
- Aspergillus burden in sputum
- FeNO

Pulmazole: $1.5B Peak Net Revenue Potential in the U.S.

Anticipated 1st line use drives Pulmazole's ~$1.5B U.S. peak net revenue forecast





Payers Interviewed Suggested ~80% Market Access*** and ~$40K Annual Treatment Cost Similar to TOBI Podhaler and Severe Asthma Biologics

Xolair Annual Price: ~$40 K

Xolair is indicated for severe asthma poorly controlled by ICS with a reactivity to aeroallergen

Tobi Podhaler Annual Price: ~$40K

TOBI Podhaler is a dry-powder inhaled antibiotic for cystic fibrosis patients with Pseudomonas aeruginosa

Nucala Annual Price: ~$35 K

Nucala is indicated for patients with severe asthma and an eosinophilic phenotype

Cinqair Annual Price: ~$25K

Cinqair is indicated for patients with severe asthma and an eosinophilic phenotype

Source: Physician Interviews; Payer Interviews; ClearView Analysis. *Also includes discount for patient compliance, patient persistence, and gross-to-net adjustment and peak revenues expected at loss of market exclusivity, ~11 years post launch; ** Estimate based on ClearView Analysis, which took into account uninsured patients, patients who are unwilling to pay, and projected access restrictions placed by payers

Cipla Partnership: Expanding Global Opportunities

Partnership validates Pulmazole development plan and potential of iSPERSE technology platform

Partnership

$22M up-front payment, combined with funds raised by Pulmatrix, fully funds the company beyond the Pulmazole Ph2 study data

Equal sharing of future Pulmazole development and commercialization costs and worldwide free cash flows (profit)

Cipla Technologies

Cipla is India's 2nd largest pharmaceutical company with global presence in over 130 countries, over 35 manufacturing facilities and a vast network for direct commercialization and strategic alliances

Cipla Technologies, a Cipla wholly owned subsidiary, was incorporated in 2018 to develop and commercialize branded products with a respiratory and neurology focus

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Pulmazole Highlights

Potential to Expand and Shift Inhaled Antifungal Use to First Line Treatment in ABPA

- Clinical precedent supports oral Sporanox efficacy in asthma-ABPA, including FEV_1 and exacerbation improvement
- Ph1/1b data demonstrated potential for Pulmazole to improve upon the known efficacy, safety and tolerability of oral Sporanox
- Improved efficacy, safety and tolerability has the potential to increase antifungal use and shift Pulmazole to first line treatment for ABPA – addressing the underlying cause of disease and avoiding side effects of oral antifungal therapy and prolonged steroid treatment
- Ph2 proof of mechanism clinical study readout planned mid-2020
- Worldwide 50-50 co-development and revenue share Pulmazole partnership with Cipla Technologies on a potential ~$1.5B peak net revenue opportunity in U.S. alone

* Research: Clearview Analysis

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PUR1800

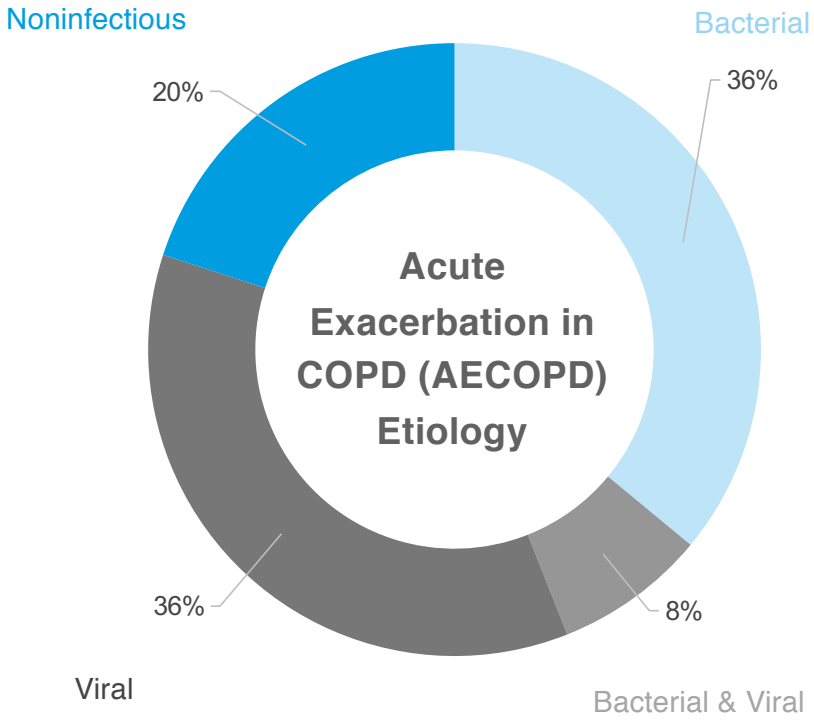
Narrow Spectrum Kinase Inhibitor (NSKI)

Inhaled p38, Syk, Src Kinase Inhibitor to Treat Acute Exacerbations in COPD (AECOPD)

Reformulation of Janssen's RV1162

Limited Efficacy in Standard of Care for AECOPD Moderate-to-Severe Exacerbations

Significant unmet need exists in AECOPD with underlying infection and/or steroid resistance



AECOPD Incidence and Etiology

- **Steroids are standard of care** for moderate-to-severe acute exacerbations, which occur across all patient severity types
- ~90% of the 18M annual U.S. moderate-to-severe exacerbations are treated in outpatient setting
- **Infectious etiologies cause ~80% of acute exacerbations**
- Purulent sputum indicates management should incorporate antibiotics
    - Viral exacerbations tend to last longer than bacterial exacerbations and are most often caused by rhinovirus infection
- **Steroids have limited efficacy in addressing infection induced inflammation**

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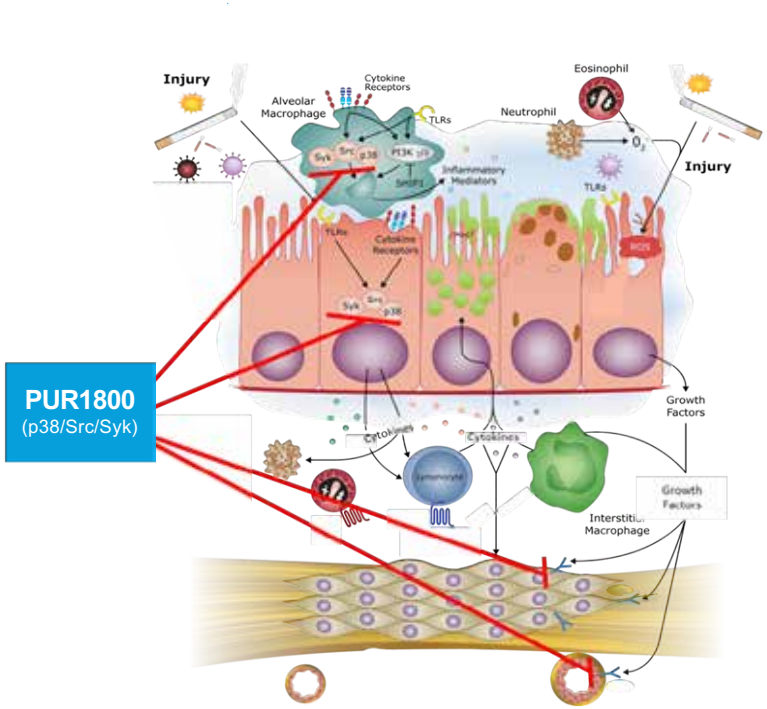
Source: Hurst. N Engl J Med. 2010; 363:1128; Anzueto. *Am J Med Sci. 2010*;340(4)309; Celli. *Eur Respir J.* 2007;30(2):401; D-C. Man. *ERJ Open Res.* 2015;1(2); Vogelmeier. *Am J Respir Crit Care Med.* 2017; 195(5)557; Pulmatrix Internal Documents; Physician Interviews; ClearView Analysis

Narrow Spectrum Kinase Inhibitors (NSKI)

Block steroid resistant inflammation & lung remodeling processes



Three Primary Benefits in AECOPD

01

Treat Steroid-Resistant Inflammation

Inhibit p38 MAP kinases (p38MAPK) to restore steroid sensitivity and reduce inflammation

Block inflammatory action of Src, which promotes cytokine production in damaged airway epithelial cells

02

Treat Inflammation from Infections

Prevent viral and bacterial p38MAPK stimulation

Suppress Syk-promoted pro-inflammatory cytokine production from bacterial infection

03

Treat Airway Remodeling

Block growth factor mediated activation of primary lung fibroblasts

Potential to be disease modifying

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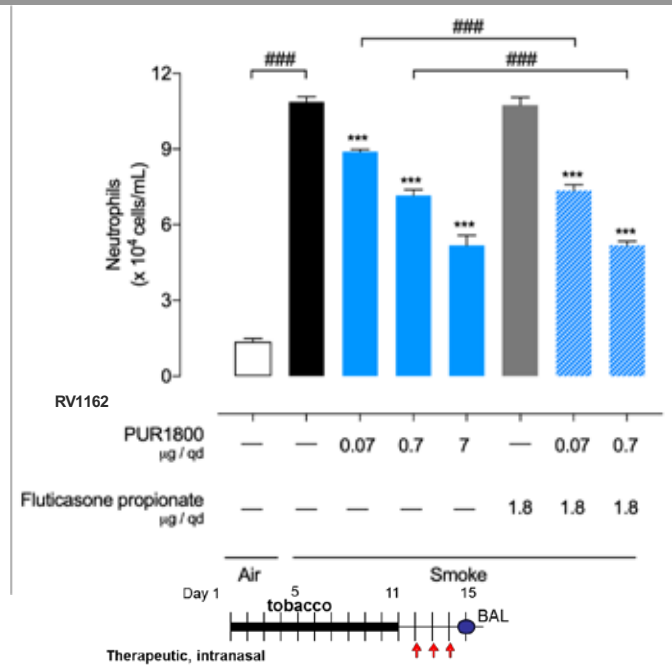
Source: Barnes PJ. *Pharmacol Rev* 2016; 68:788–815, Barnes PJ. *J Allergy Clin Immunol* 2013; 131:636-45, Geraghty P et al. *Am J Respir Cell Mol Biol.* 2014; 50(3):559-70, Angata T et al. *Cell Mol Life Sci.* 2013; 70(17):3199-210

RV1162 (NSKI) Reduces Steroid Resistant Inflammation in Preclinical Models

RV1162 reduces steroid insensitive, tobacco smoke-induced inflammation and restores steroid efficacy

Inhibition of Tobacco Smoke-Induced Lung Inflammation #



Additional Pre-Clinical Data

In vitro:

- Verified kinase target engagement and inhibition with similar potency across p38, Src and Syk kinases
- Reduces steroid-sensitive cytokine release in human and animal cell lines with broadly similar potency (data has translational utility)

Ex vivo:

- Reduces steroid-resistant inflammation in cells from COPD patients
- Reduces viral replication and infection-related inflammation in human cells

In vivo:

- Reduces steroid insensitive inflammation in LPS, ovalbumin and tobacco smoke models
- Restores steroid efficacy

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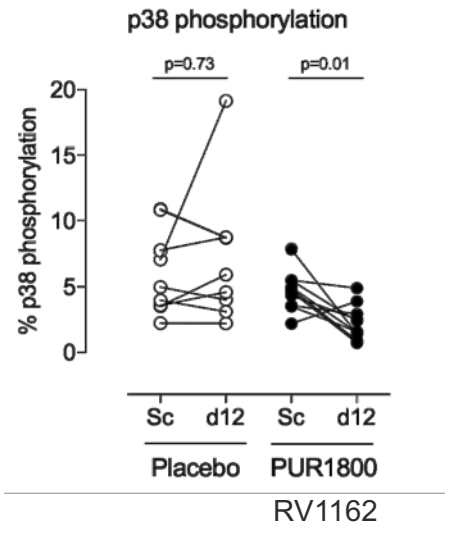
Source: Data on File; Pulmatrix Internal Documents; ### Significant difference between each other at p<0.001; *** Significant difference from tobacco smoke control at p<0.001

First in Human Study of RV1162 (NSKI)

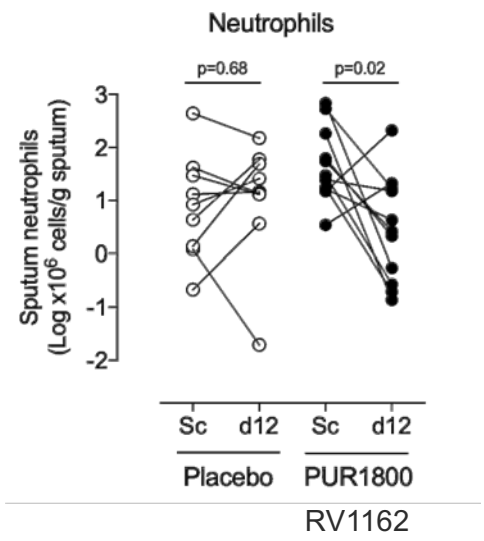
Decreases markers of inflammation in moderate-to-severe COPD patients

RV1162 shows clinical target engagement and positive biomarker efficacy in Janssen Trial

RV1162 Reduced P38 MAPK Phosphorylation



RV1162 reduced Sputum Neutrophils



Clinical Data Summary

- RV1162 lactose blend was well tolerated in human study including stable COPD subjects: ClinicalTrials.gov NCT01970618
- RV1162 lactose blend reduced the level of p38 phosphorylation demonstrating target engagement
- 12 days of patient dosing shows onset of anti-inflammatory benefit after a short dosing regimen
- RV1162 lactose blend showed dose-proportionality, linear kinetics, and minimal variability between subjects

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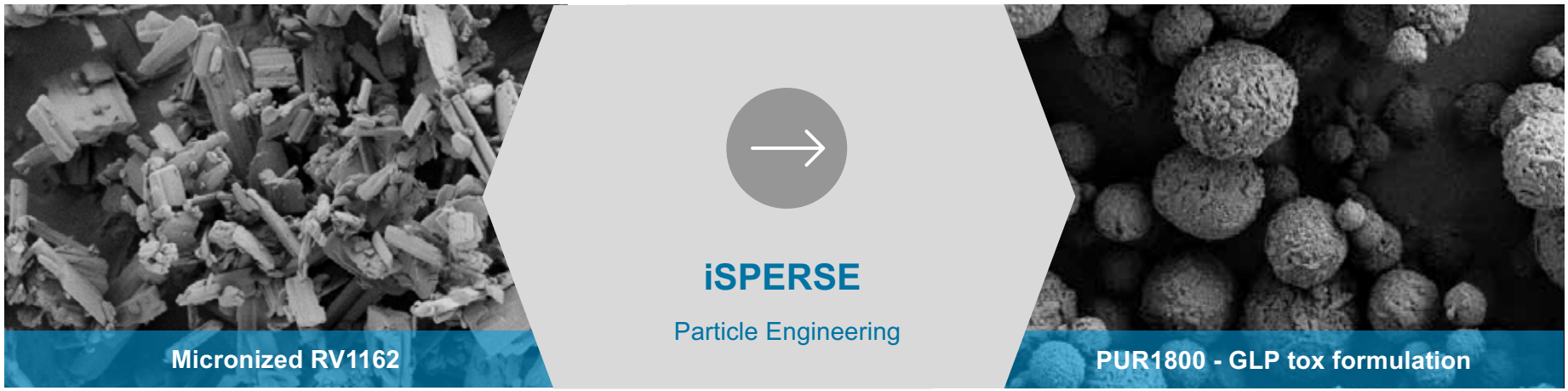
Source: EST001 Study with 35 healthy subjects and 30 subjects with moderate-to-severe COPD

PUR1800 iSPERSE Formulation Overcame the Limitations of RV1162 in Lactose Blend



- Janssen engaged Pulmatrix to overcome poor aerosol performance, drug accumulation *in vivo* and concerns with safety profile of RV1162 lactose blend formulation
- Janssen exited respiratory and licensed RV1162 to Pulmatrix given iSPERSE ability to enable further clinical development
- PUR1800 iSPERSE formulation of RV1162 was identified and advanced into 28-day GLP non-clinical safety study
  - Lead formulation shown to be physically and chemically stable with robust aerosol performance in non-clinical safety study
  - Improved aerosol performance means lactose blend-comparable lung doses of PUR1800 can be achieved with less than ½ of the nominal dose

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28-Day GLP Toxicology Study Resulted in Improved Safety Margins Relative to RV1162

- Janssen's EST001 study of RV1162 lactose blend demonstrated efficacy biomarkers at 500 µg nominal dose (~125 µg lung dose)
- PUR1800 achieves same lung dose with ~ 200 µg
- Data supports maximum PUR1800 nominal clinical dose of 550 µg

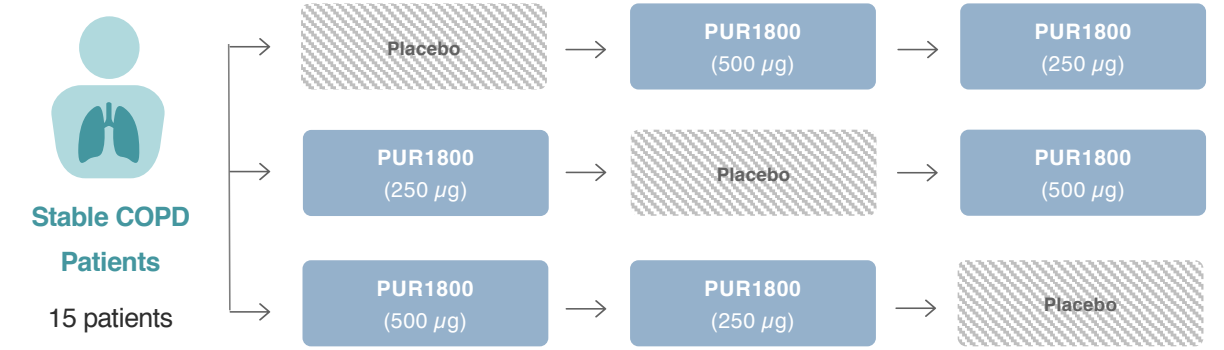
	Rat Study	Dog Study
Systemic Exposure	Dose Proportional	Dose Proportional
Lung Exposure	Dose Proportional	Dose Proportional
Noteworthy clinical signs	None	None
PUR1800 28-Day NOAEL	259 µg/kg/day / (max dose on study)	124 µg/kg/day / (max dose on study)
Maximum Nominal PUR1800 Clinical Dose	600 µg	550 µg
Resultant PUR1800 Lung dose	360 µg	330 µg
RV1162 Lactose blend dose to achieve same lung dose	~1440 µg	~1320 µg

pulmatrix Source Data on File; Pulmatrix Internal Documents

PUR1800 Phase 1b Proof of Concept Trial in Stable COPD

Phase 1b: safety study bridging from lactose to iSPERSE formulation

Randomized, double-blind, 3-way crossover study; 3 dose groups (2 active, 1 placebo) with 15 pts. 7 Days of daily dosing, with 28-day crossover and 7-day follow-up



225 μg iSPERSE PUR1800 ≈ 500 μg Janssen RV1162 lactose Blend (based on predicted lung deposition)

Upcoming milestones

Q1-2020	Q2-2020	Q3-2020	Q4-2020

Phase 1b Trial Start Anticipated

Phase 1b Data Anticipated

Endpoints

- Safety & Tolerability
- Pulmonary function (FEV_1) days 1, 4 and 7
- PK on days 1 and 7
- PD on days 1 and 7

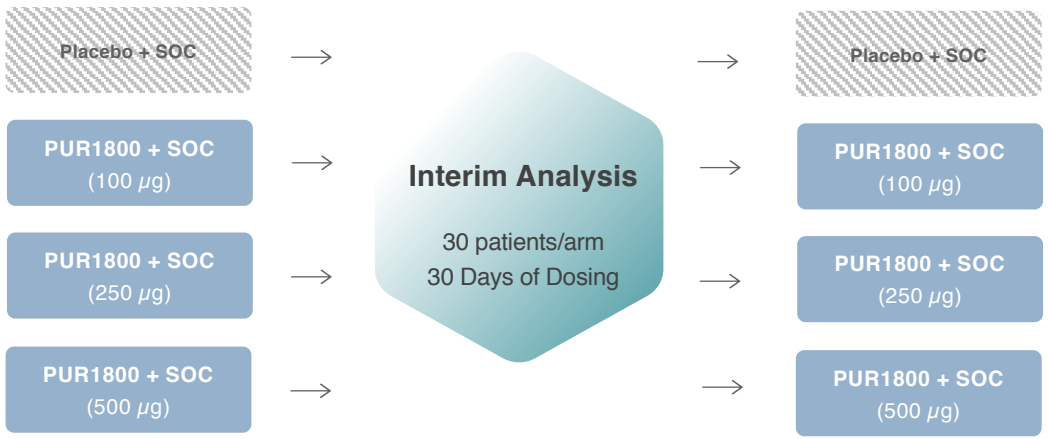
Proposed Future Phase 2 Study Design

Design to be informed by Ph1b results, FDA feedback and potential partner interest

Randomized, double-blind, placebo controlled study
(n=100 per arm). Up to 30 days dosing with 180 days follow-up.

Patients with Moderate-to-Severe AECOPD Exacerbations

30% ≤ FEV_1 < 80%	Randomized
n=400	1:1:1:1
100 patients per arm	



Primary Endpoint

- Pulmonary function (FEV_1) days 7, 14, 30, 60, 90, 120, 150 and 180

Interim Analysis at 30 days in first 30 patients per arm

- FEV_1, PD endpoints, kinase phosphorylation, sputum neutrophils

Overall analysis at 180 days after last dose in 100 patients per arm

- FEV_1, evaluation of clinical response, treatment failure rates, patient reported outcomes, number of exacerbations and time to exacerbation over 180 days, hospitalization rates

PUR1800: $2.4B in U.S. Peak Revenue Potential

Large Addressable AECOPD Burden

~16M COPD patients in the U.S.

77% experience at least one exacerbation annually

~18M moderate-to-severe AECOPD episodes annually in U.S.

> 20% corticosteroid treatment failure rate in moderate-to-severe AECOPD patients

PUR1800 potentially has efficacy across the spectrum of causes of AECOPD

Prescriber Reported PUR1800 Utilization

Treatment Option	Current Use	Expected Use
PUR1800 (+ oral corticosteroids and/or antibiotics)	**0%**	**~35%**
Oral Corticosteroids + Antibiotics	~58%	~34%
Antibiotics Alone	~13%	~10%
Oral Corticosteroids Alone	~25%	~18%
No Treatment	~4%	~3%

PUR1800 Market Opportunity

Up to 35% expected use**, in addition to standard of care (oral corticosteroids plus/minus antibiotic)

Pricing Potential & Market Access

70% payer market access*** with minimal use restrictions and launch price of $650 per incident

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Source: * Peak revenues expected at loss of market exclusivity, ~14 years post launch and also includes discount for patient compliance, patient persistence, and gross-to-net adjustment; ** Estimate based on ClearView Analysis, which included qualitative physician surveys and interviews; # Estimate based on ClearView Analysis, which took into account uninsured patients, patients who are unwilling to pay, and projected access restrictions placed by payers

PUR1800 Highlights

IND Ready with potential to Address Significant Unmet Needs in AECOPD

- 18M moderate-severe AECOPD yearly incidence in U.S., 80% of which is due to infection induced inflammation where standard of care (steroids) has limited efficacy
- In pre-clinical studies, RV1162 demonstrated multifactorial efficacy in steroid-resistant inflammation
- In clinical studies, RV1162 lactose blend demonstrated target engagement, anti-inflammatory activity, safety and tolerability in a 12-day study with stable COPD patients*
- PUR1800 – the iSPERSE formulation of RV1162, has the potential to dose up to 3X the RV1162 lactose blend's "effective dose" while improving safety margins
- Pulmatrix Phase 1b clinical program for PUR1800 planned to start 1Q 2020
- PUR1800 potentially represents up to ~$2.4B peak net revenue opportunity in the U.S. for an inhaled non-steroidal treatment of AECOPD

* Research: Clearview Analysis

Glossary of Terms

ABPA	Allergic Bronchopulmonary Aspergillosis
ACQ-6	Asthma Control Questionnaire 6
AECOPD	Acute Exacerbations of Chronic Obstructive Pulmonary
BAL	Bronchoalveolar Lavage
CMC	Chemistry Manufacturing and Controls
COPD	Chronic Obstructive Pulmonary Disease
FeNO	Fractional Exhaled Nitric Oxide
FEV_1	Forced Expiratory Volume in 1 Second
GLP	Good Laboratory Practice
HNV	Healthy Normal Volunteers
ICS	Inhaled Corticosteroid
IDSA	Infectious Disease Society of America
IgE	Immunoglobulin E Antibodies
IgG	Immunoglobulin G Antibodies
IND	**Investigational New Drug**
IP	Intellectual Property
IPF	Idiopathic Pulmonary Fibrosis
LPS	Lipopolysaccharide
MAD	Multiple Ascending Dose
MAPK	Mitogen-Activated Protein Kinases
NSKI	Narrow Spectrum Kinase Inhibitor
PD	Pharmacodynamics
PK	Pharmacokinetics
POM	Proof of Mechanism
Pulmazole	PUR1900
SAD	Single Ascending Dose
SOC	Standard of Care
Sporanox	Oral Itraconazole 200mg

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Appendix