



Medicines That Make a Difference®

## Corporate Overview

September 2020

# Forward-looking statements






Under the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995, the company cautions investors that any forward-looking statements or projections made by the company are subject to risks and uncertainties that may cause actual results to differ materially from the forward-looking statements or projections.

Examples of forward-looking statements in this presentation may include the Company's strategies, plans and objectives, the Company's regulatory strategies and timing of clinical studies (including the data therefrom), the potential characteristics, benefits and mechanisms of action of the Company's product and product candidates, the potential that the Company's research programs will progress product candidates into the clinic, the Company's expectations for product candidates through development, the Company's expectations regarding its allocation of resources, potential regulatory approval and commercialization (including their differentiation from other products or potential products), product sales or profit share revenue and the Company's expectations for its 2020 operating loss, excluding share-based compensation and other financial results.

The company's forward-looking statements are based on the estimates and assumptions of management as of the date of this presentation and are subject to risks and uncertainties that may cause the actual results to be materially different than those projected, such as risks related to the impacts on the COVID-19 global pandemic on our business, delays or difficulties in commencing, enrolling or completing clinical studies, the potential that results from clinical or non-clinical studies indicate the Company's compounds or product candidates are unsafe or ineffective, risks that product candidates do not obtain approval from regulatory authorities, the feasibility of undertaking future clinical trials for our product candidates based on policies and feedback from regulatory authorities, dependence on third parties to conduct clinical studies, delays or failure to achieve and maintain regulatory approvals for product candidates, risks of collaborating with or relying on third parties to discover, develop, manufacture and commercialize products, and risks associated with establishing and maintaining sales, marketing and distribution capabilities with appropriate technical expertise and supporting infrastructure, current and potential future disagreements with Innoviva, Inc. and TRC LLC, the uncertainty of arbitration and litigation and the possibility that an arbitration award or litigation result could be adverse to the Company.

Other risks affecting Theravance Biopharma are in the company's Form 10-Q filed with the SEC on August 10, 2020, and other periodic reports filed with the SEC.

# Creating transformational value for stakeholders

-  Innovative and productive **research engine** feeding **pipeline of organ-selective molecules designed to optimize therapeutic index**
-  Proven **development expertise** and established **commercial infrastructure** with strong history in respiratory
-  **Strategic partnerships** complement internal capabilities and balance technical, execution and financial risks
-  **Strong capital position** of \$438.3m in cash<sup>1</sup> augmented by TRELEGY ELLIPTA<sup>2</sup> royalties and YUPELRI<sup>®</sup> launch
-  Multiple milestones and **value driving catalysts** in 2020, 2021 and beyond

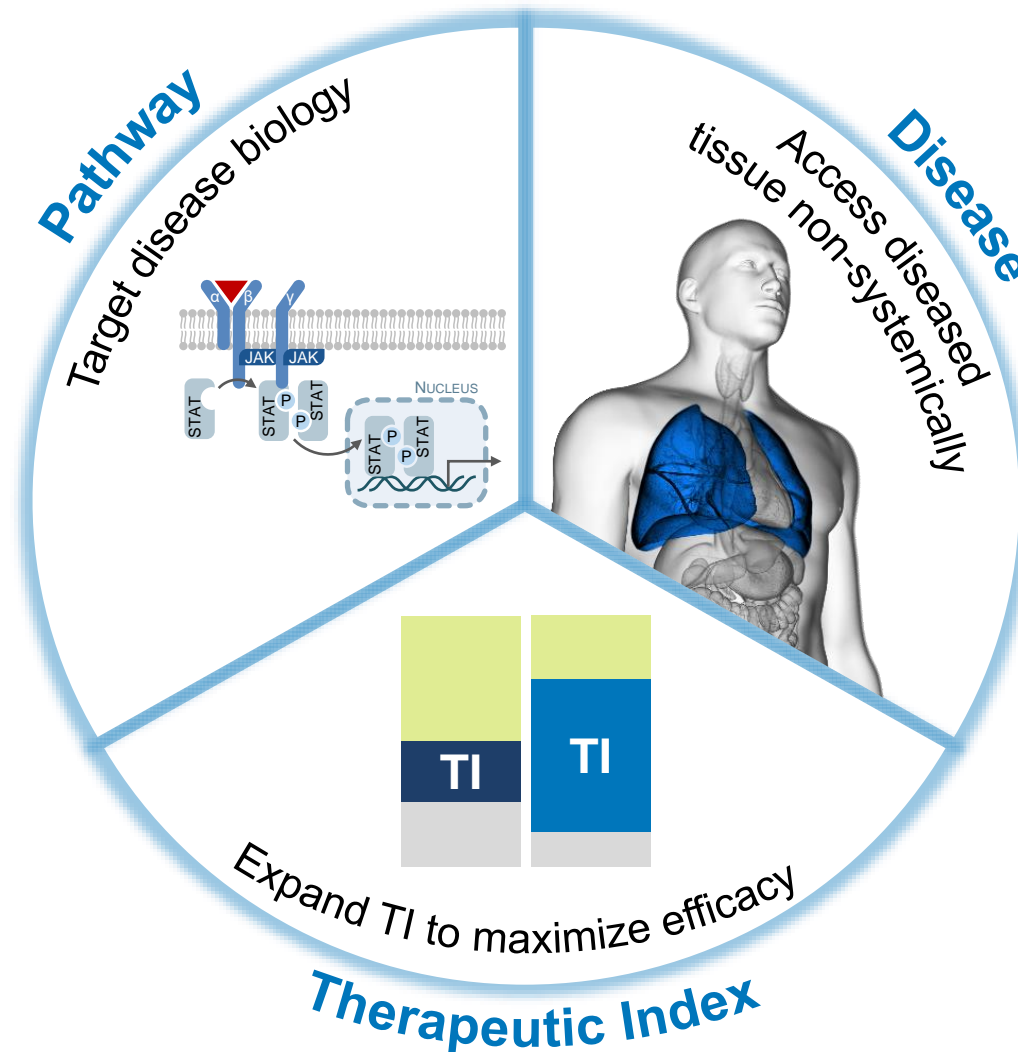
The background of the slide features a complex molecular structure, likely a protein or a large organic molecule, rendered in a semi-transparent blue color. The structure is composed of numerous spheres (atoms) connected by lines (bonds), creating a dense, interconnected network. The overall color scheme is a gradient of blue, with the molecular structure appearing as a lighter blue overlay on a darker blue background.

# Our science

Organ-selective molecules  
designed to optimize therapeutic index

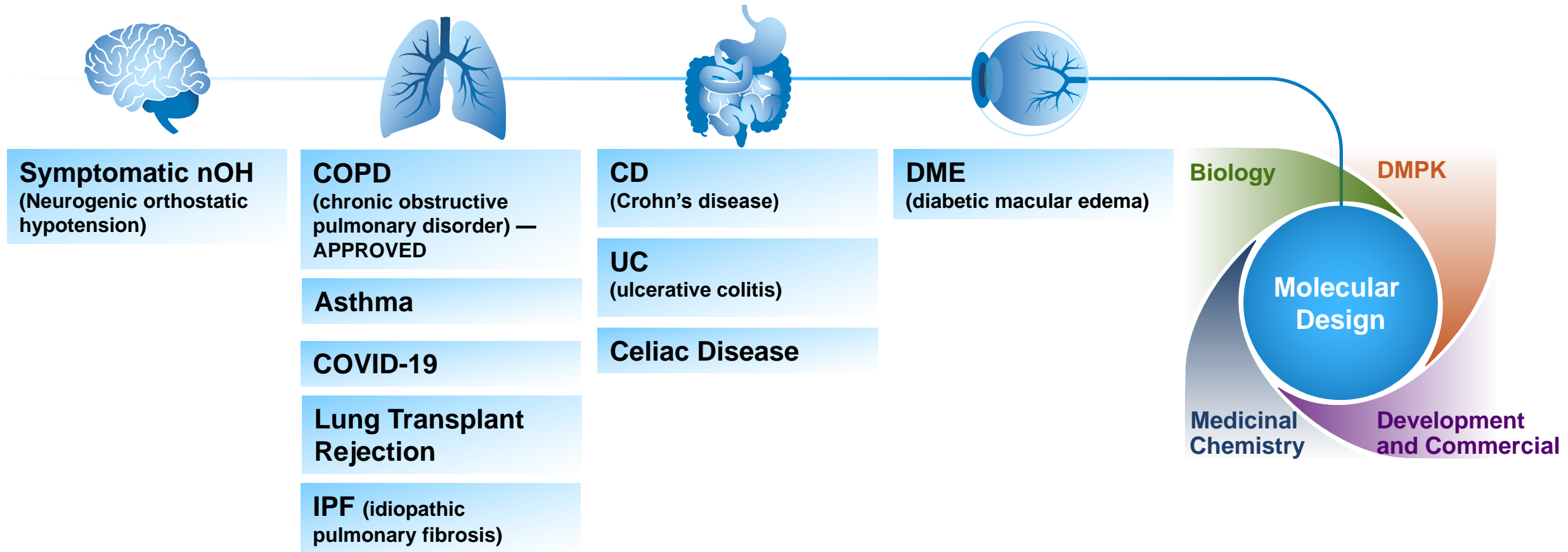


# Theravance Biopharma difference: Targeting the right disease with the right molecular design

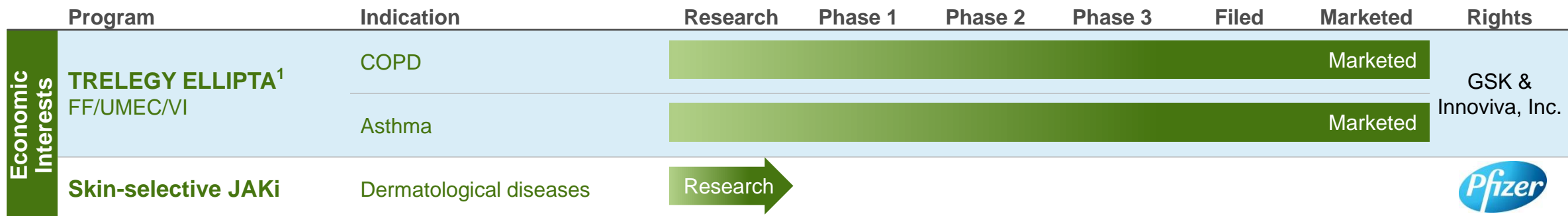
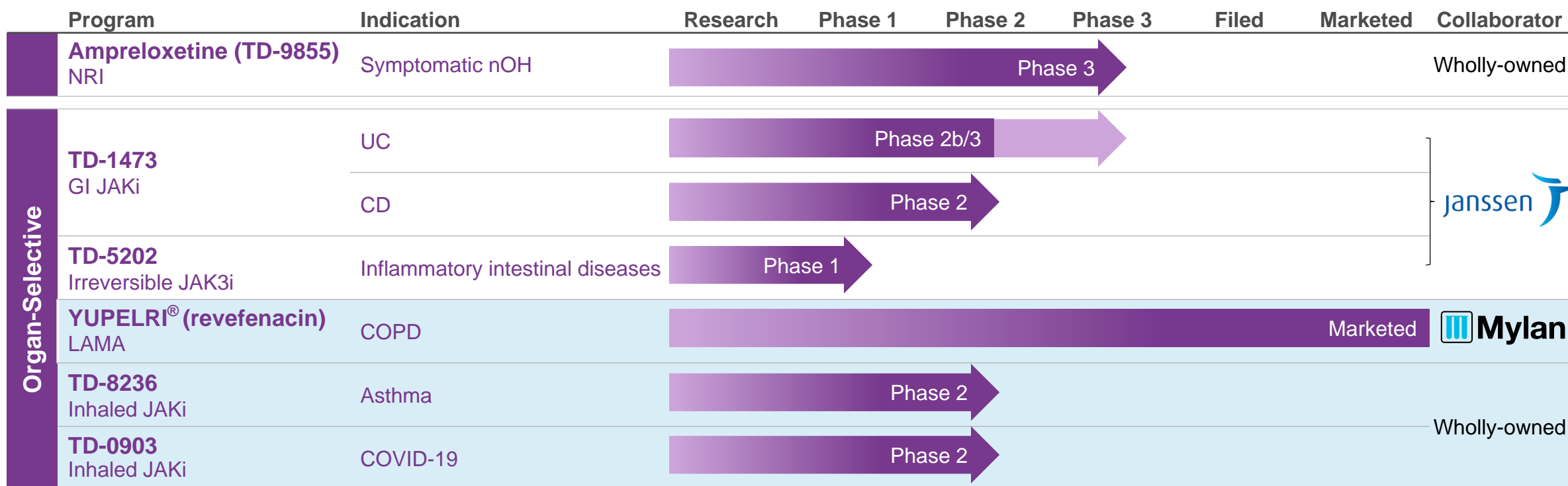


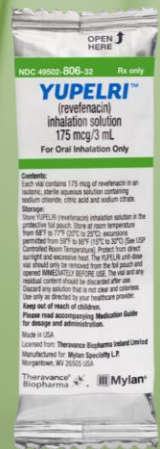


# Research and development portfolio of designed molecules: brain, lung, GI and eye



# Key programs supported by proven development and commercial expertise





# YUPELRI® (revefenacin) inhalation solution

First and only once-daily, nebulized  
maintenance medicine for COPD





# YUPELRI® (revefenacin) inhalation solution

FDA-approved for the maintenance treatment of COPD



Once-daily LAMAs are first-line therapy for moderate-to-severe COPD<sup>1</sup>

9% of COPD patients (~800,000) use nebulizers for ongoing maintenance therapy; 41% use nebulizers at least occasionally for bronchodilator therapy<sup>2</sup>

Nebulized therapy associated with reduced hospital readmissions in low PIFR patients<sup>3</sup>

**Theravance  
Biopharma**

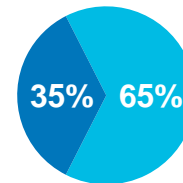


**Mylan**



**TBPH** and **MYL** worldwide strategic collaboration to develop and commercialize nebulized YUPELRI® (revefenacin)

**TBPH**



**MYL**

Companies copromote under US profit/loss share

# YUPELRI® launch metrics

Strong customer acceptance and market uptake

## ✓ FORMULARY<sup>1</sup>

- 181 wins**  
(equates to 329 accounts)
- ~86 reviews scheduled**  
(>456 potential accounts)
- 100% medical support requests fulfilled** <30 days

## ✓ PATIENT

- Field force productivity goals exceeded**
- ~44,000 patients<sup>2</sup> prescribed**  
(through Q2 2020)

## ✓ ACCESS

- 100% Medicare Part B<sup>3</sup>**
- 72% of commercial payer lives covered**  
(comprises ~8% of the YUPELRI® business)

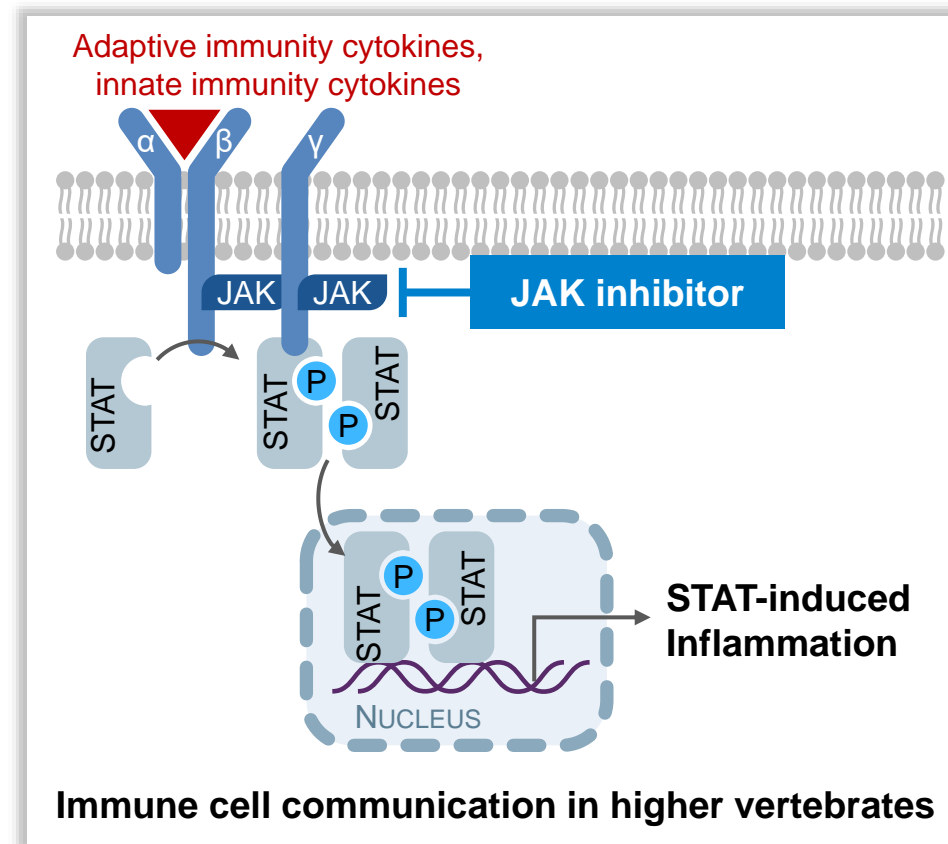
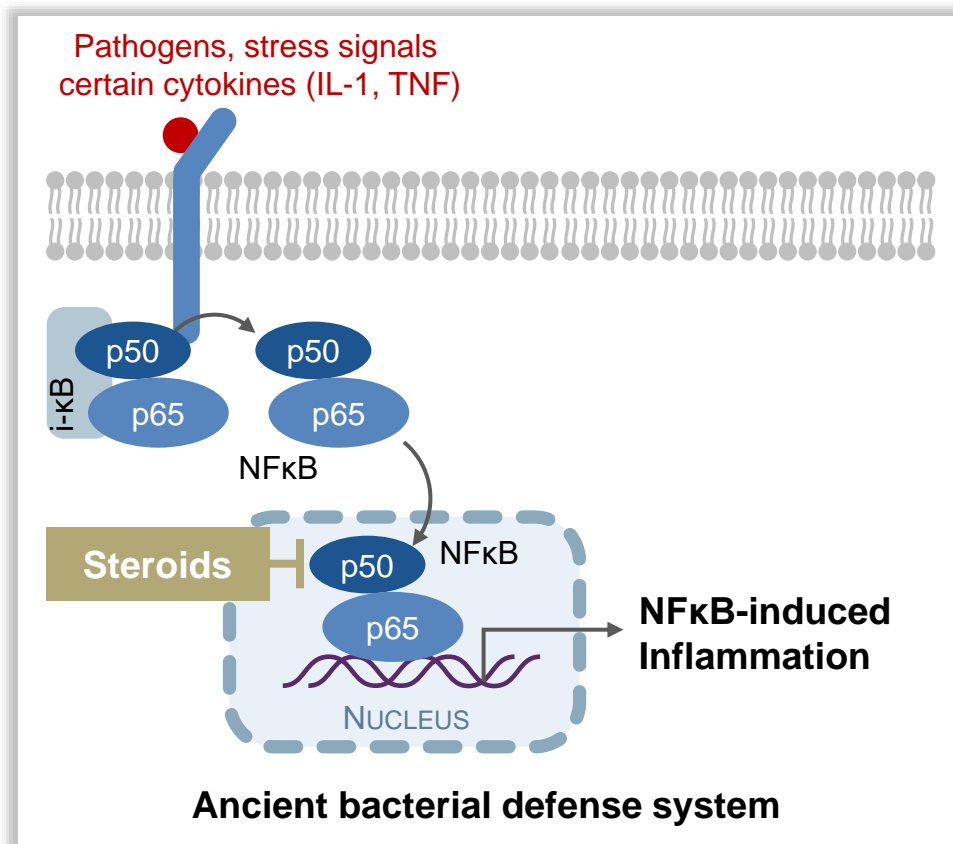
A microscopic view of mold spores, showing numerous spherical spores on long, thin stalks. The image is overlaid with a semi-transparent blue circular graphic on the right side.

# Inhaled JAK inhibitor Portfolio

Potential to transform treatment of respiratory inflammation

A white arrow pointing to the right, positioned at the end of the text line.

# Inhaled JAK inhibitors can transform treatment of inflammation-induced respiratory diseases



**Time is right for novel inhaled anti-inflammatory mechanisms**





**TD-8236**

Potential first inhaled JAKi for asthma

# High medical and economic burden in uncontrolled asthma

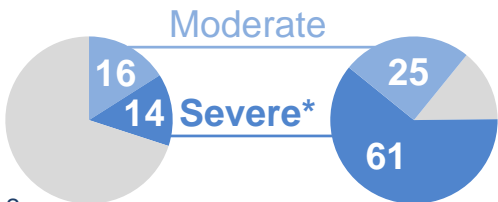
PATIENT  
POPULATION

339M

cases worldwide<sup>1</sup>

25M

US cases  
8% of adults  
8% of children<sup>2</sup>



Healthcare  
utilization<sup>3</sup>

~\$58B

US medical costs

~\$15B

US asthma market  
(May 2020)

CURRENT  
TREATMENT  
LANDSCAPE

**ICS + LABA** (often fail to control disease)  
**Approved biologics** (affect subsets of patients)

- XOLAIR (omalizumab)
- NUCALA (mepolizumab)
- CINQAIR (reslizumab)
- FASENRA (benralizumab)
- DUPIXENT (dupilumab)

Step-up for severe asthma: LTRAs, tiotropium, OCS, biologics

JAK/STAT cytokines implicated in  
moderate-to-severe asthma

T2-high	T2-low
<b>IL-4</b>	<b>IL-23/IL-12</b>
<b>IL-13</b>	<b>IL-6</b>
<b>IL-5</b>	IL-27
<b>TSLP</b>	IFN-γ

Bold: biologics in development or approved.

STRATEGIC  
OPPORTUNITY

TD-8236

Potential to transform the treatment of respiratory inflammation by treating moderate-to-severe asthma regardless of T2 phenotype, including patients who remain symptomatic despite compliance on high-dose ICS

# TD-8236: Phase 1 clinical trial design

Parts A & B completed September 2019; Part C data expected 4Q 2020



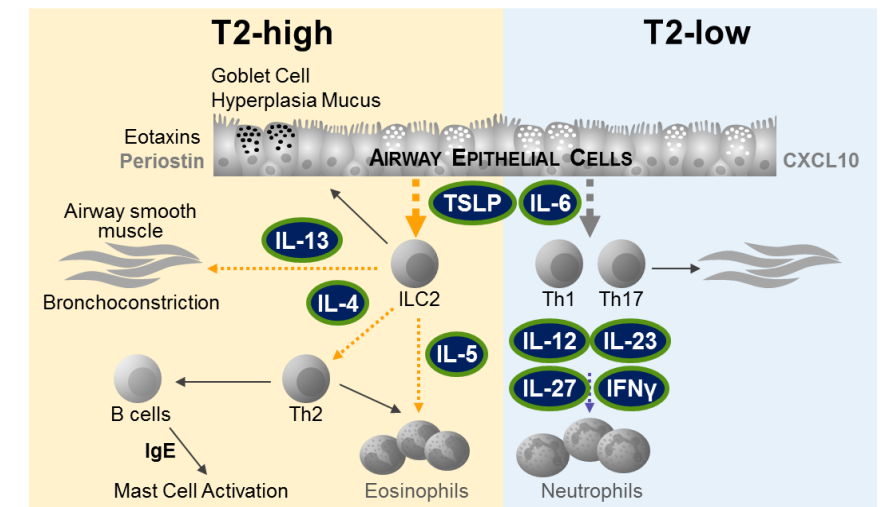
## PART C

### MoA Biomarkers

(Moderate-to-severe asthmatics)

N = 16 active/8 Placebo  
Study open and enrolling

D 1 2 3 4 5 6 7  
1500 µg



- MoA biomarkers to be assessed in target patient population
- Goal: build confidence in compound, MoA and dose in early-development

# TD-8236: Lung-selective pan-JAK inhibitor

Phase 2 allergen challenge study

## TD-8236 Phase 2 Lung Allergen Challenge 14 days (N=21)

Dose characterization

Randomized, double-blind, placebo-controlled, crossover study

- ✓ Phase 2 allergen challenge study underway
- ✓ Data expected 4<sup>th</sup> Q 2020



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# TD-0903 Program

Nebulized lung-selective pan-JAK inhibitor to treat:

- Acute hyperinflammation of the lung in COVID-19
- Chronic inflammation for the prevention of lung transplant rejection

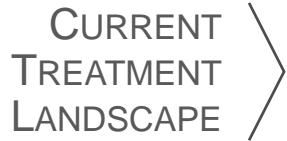
# Leveraging respiratory expertise for potential acute treatment in response to a global pandemic



**>27.8M**  
patients worldwide<sup>1</sup>

**>6M** .....>  
US patients<sup>1</sup>

**~2.4%**  
patients become  
hospitalized<sup>2</sup>



**No vaccine available**  
Current treatment: Supportive therapy

As of July 1, 2020:

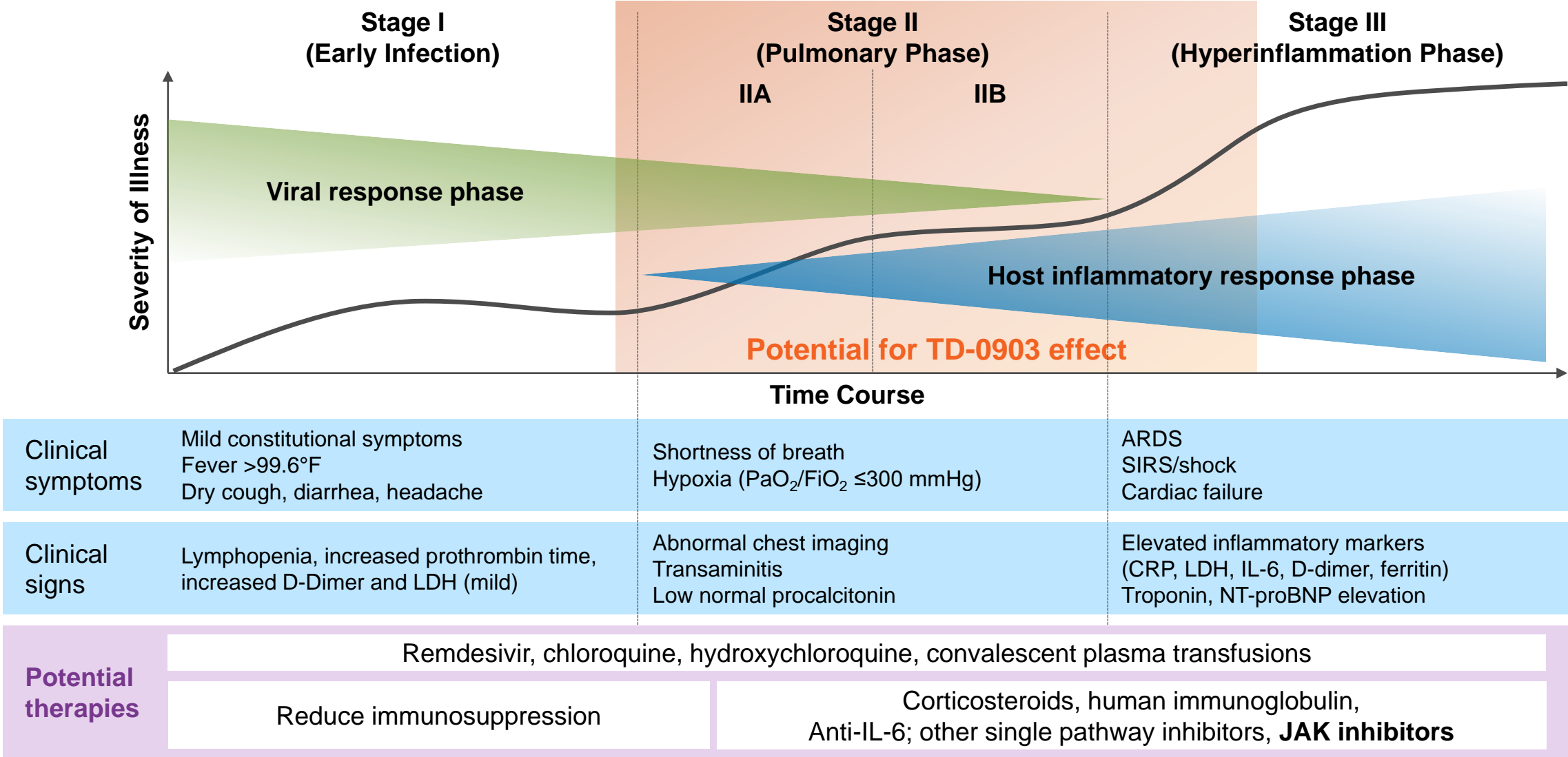
**439** drugs in **2327** trials worldwide



**TD-0903**

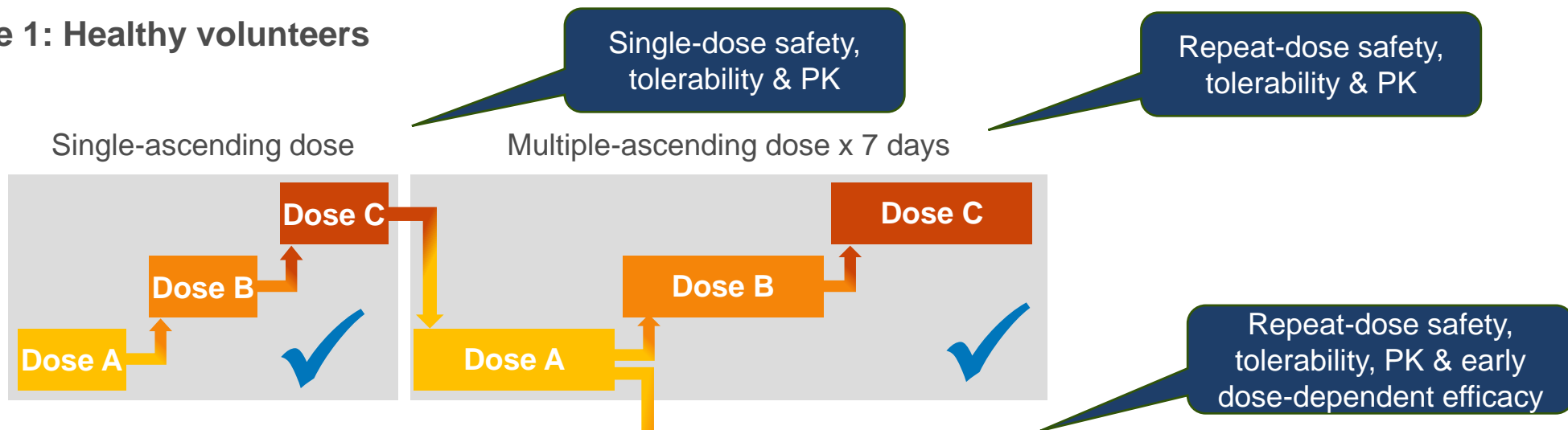
Inhaled lung-specific therapeutic: potential to be used in combination with other treatment modalities (e.g., antivirals) to provide additional therapeutic benefit without risk of systemic immunosuppressive issues that may occur with systemic anti-inflammatories

# Host inflammatory response to COVID-19 drives ALI and ARDS

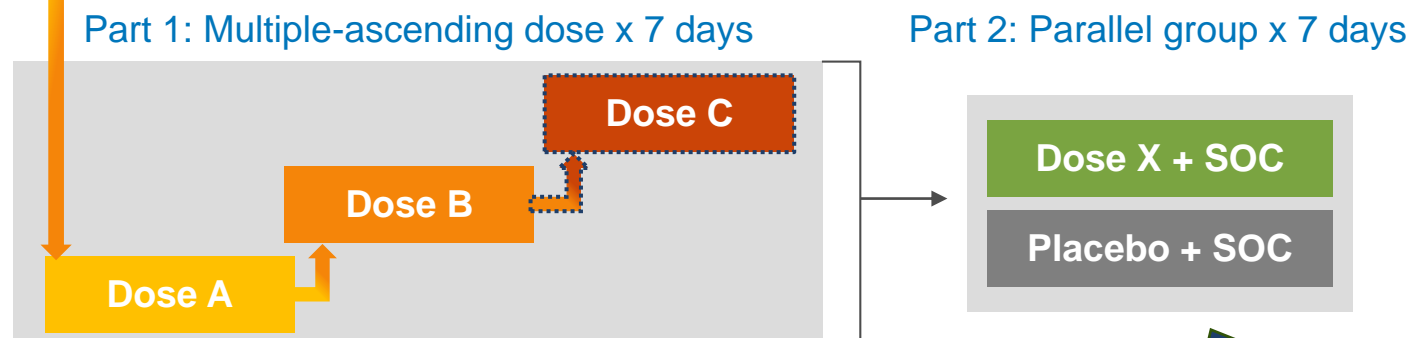


# TD-0903: Development plan designed to progress rapidly

## Phase 1: Healthy volunteers



## Phase 2: Hospitalized COVID-19 patients





# First-in-disease opportunity for the prevention of lung transplant rejection

## PATIENT POPULATION

Lung transplants have the poorest prognosis of all solid organ transplants  
COPD, IPF, and CF top 3 diagnoses driving need for lung transplantation

**6,240**

lung transplants  
worldwide, 2019<sup>1</sup>

**2,714**

lung transplants  
per year in US<sup>2</sup>

**15%**

CAGR  
since 1988

**~50%**

mortality at 6 years  
post transplant<sup>3</sup>

**\$3.5B**

medical/productivity  
costs (2015–2025)

## CURRENT TREATMENT LANDSCAPE

**No FDA-approved therapies to prevent lung transplant rejection or CLAD**

Current standard of care: triple immunosuppression therapy

- Calcineurin inhibitors (tacrolimus)
- Corticosteroids
- Anti-proliferative agents (MMF)
- IL-2 mAb induction therapy (basiliximab)

## STRATEGIC OPPORTUNITY

**TD-0903**

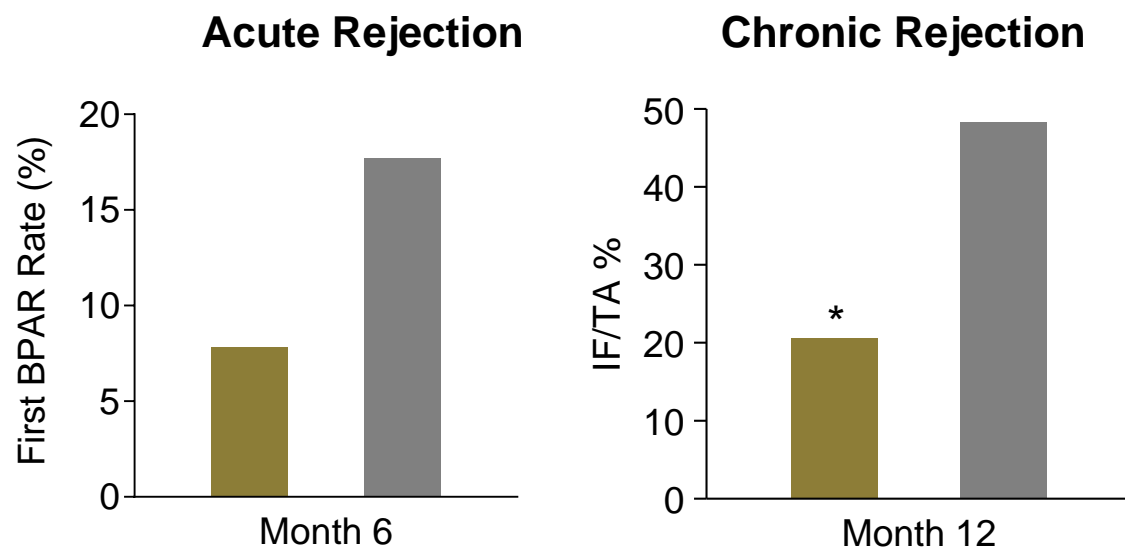
Potential first approved therapy specifically to prevent acute lung transplant rejection and development of CLAD  
Use following lung transplantation could improve patient morbidity and mortality risk, and reduce need for re-transplantation

# Pan-JAK inhibitors can prevent transplant rejections

Noninferiority trial of tofacitinib vs cyclosporine (CsA) in kidney transplant recipients<sup>1</sup>

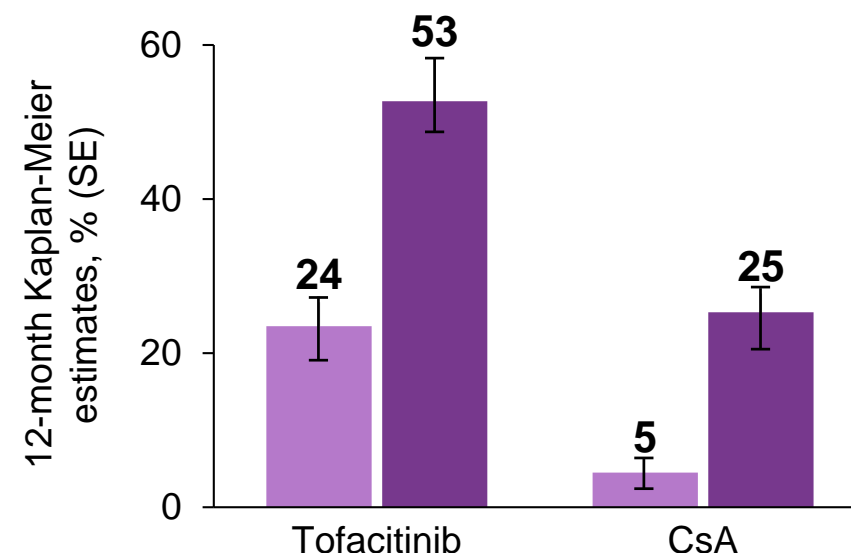
## Tofacitinib is superior to CsA in efficacy measures

■ Tofacitinib ■ CsA



## Increased infection risk with tofacitinib over CsA

■ CMV disease ■ Serious infection



- ▶ JAK inhibition was superior to cyclosporine in prevention of acute and chronic rejections
- ▶ Serious infections increased with systemic JAK inhibitors including CMV



# **Ampreloxetine (TD-9855)**

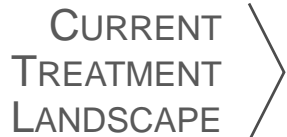
Once-daily norepinephrine reuptake inhibitor to treat symptomatic neurogenic orthostatic hypotension

# Reduced quality of life, significant care-giver burden and limited therapeutic options for symptomatic nOH patients



**~350K**  
US patients

nOH is a symptom of MSA, PAF and PD  
70–80% of MSA patients<sup>1</sup>, and  
30–50% of PD patients<sup>2</sup> have nOH<sup>3</sup>



**Current treatments (midodrine, fludrocortisone, droxidopa) have significant limitations**

Subset of patients  
do not respond

None demonstrate  
durable effect

Safety profiles  
that limit use

Require multiple  
daily dosing

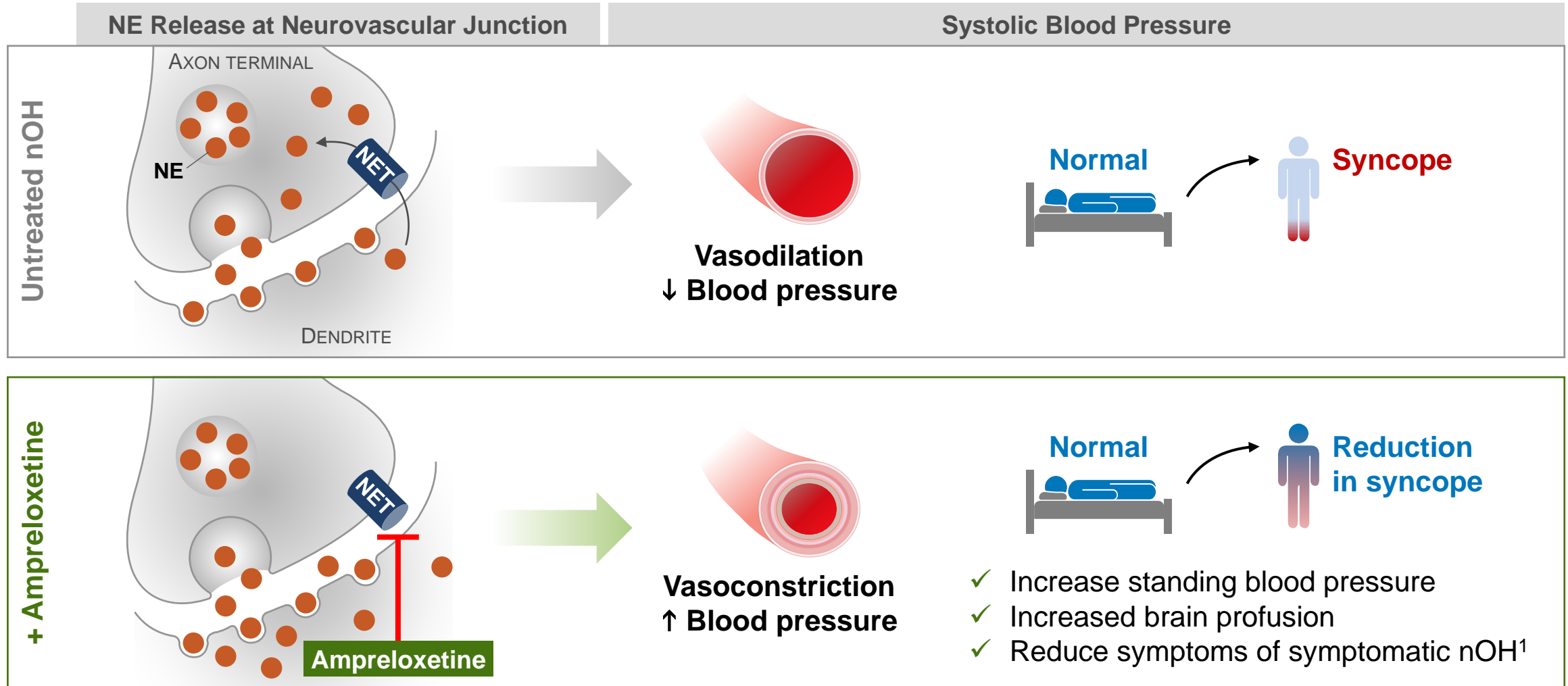


## Ampreloxetine

Designed to reduce symptoms of nOH by prolonging the effect of endogenous norepinephrine with the potential to provide a meaningful and durable symptom improvement to underserved patients



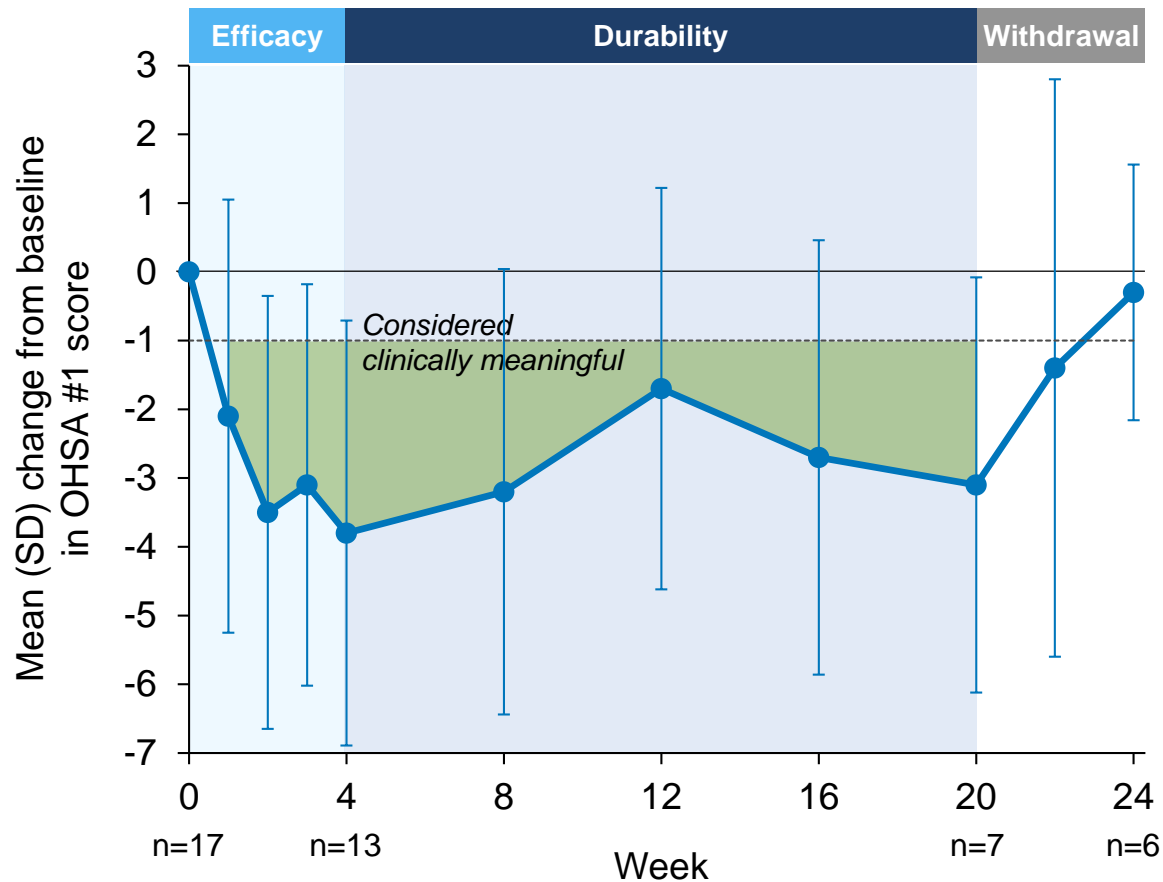
# Designed to reduce symptoms of nOH by prolonging the effect of endogenous norepinephrine



# Amprexetine: Potential to provide meaningful and durable symptom improvement to underserved patients

## Amprexetine

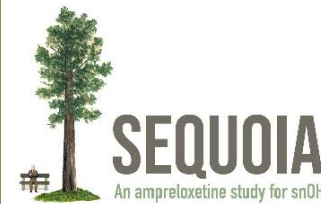
### Phase 2 data in nOH; 20 weeks of treatment



## Phase 3 Registrational Program

### Study 169: 4 weeks (N=188)

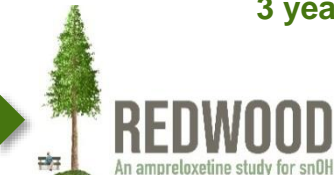
Randomized, double-blind, placebo-controlled, parallel group



### Study 170: 22 weeks (N=254)

Randomized 6-week withdrawal phase

Completers: → Extension study: 3 years



- ✓ Phase 3 registrational program ongoing; 4-week efficacy data expected 2021



# **TD-1473 (JNJ-8398)**

Oral gut-selective pan-JAK inhibitor to treat  
inflammatory bowel diseases

# Need for new medicines to treat Inflammatory Bowel Disease



**6.8M** global cases, 2017<sup>1</sup>

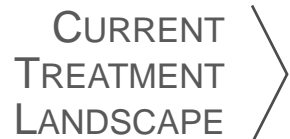
**1.6M** current US patients<sup>2</sup>

Current US patients **780K** CD cases  
**907K** UC cases

**\$16B** global IBD treatment market, 2018

**\$31B** US disease burden<sup>2</sup>

**~4.4%** CAGR 2018–2026



Standard of care:

**Biologics have become the mainstay of treatment in moderate-to-severe patients**

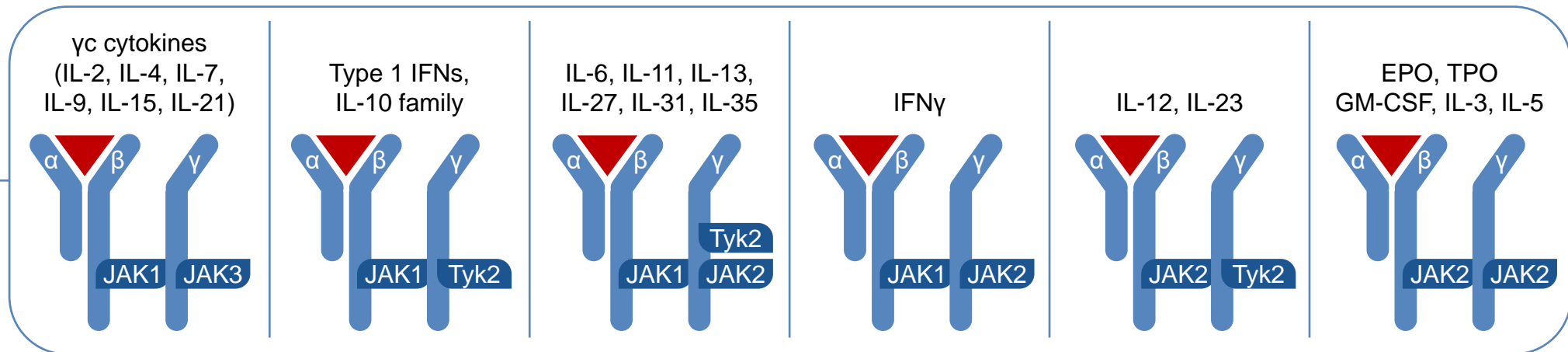
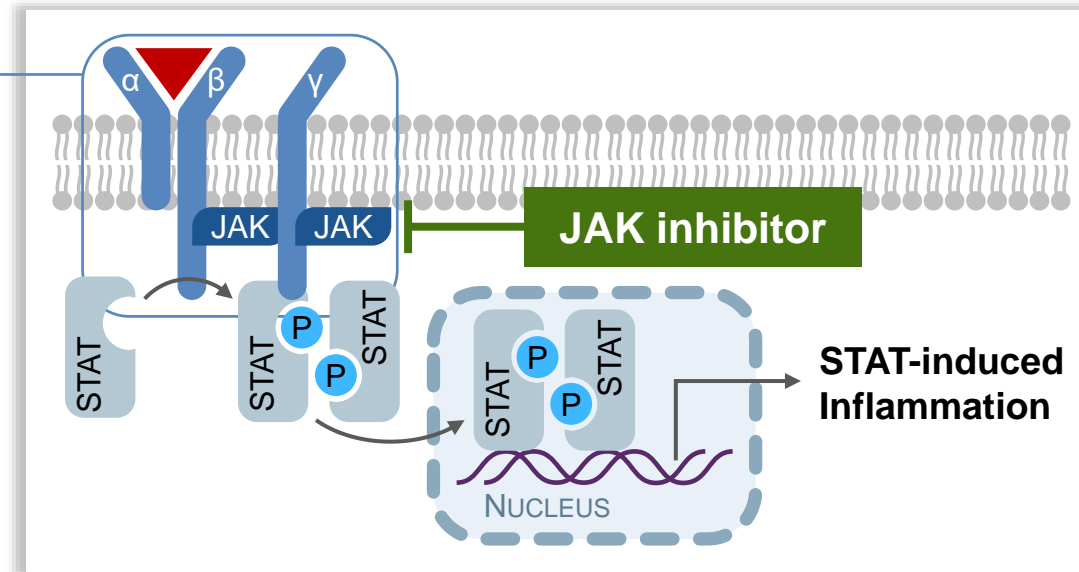
Steroids, immunosuppressants, and TNF inhibitors associated with side effects that further decrease HRQoL



**TD-1473**

Gut-selective agent: if used earlier in the course of disease, has potential to be a new cost-effective therapy option that reduces associated disease management costs and improves patient HRQoL

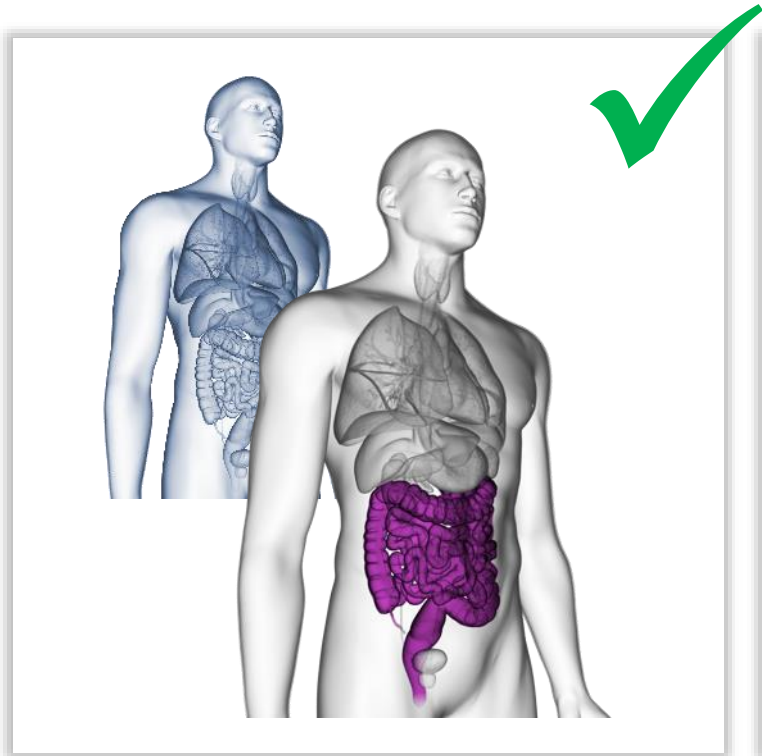
# JAK-STAT pathway: orchestrating signaling of multiple pro-inflammatory cytokines



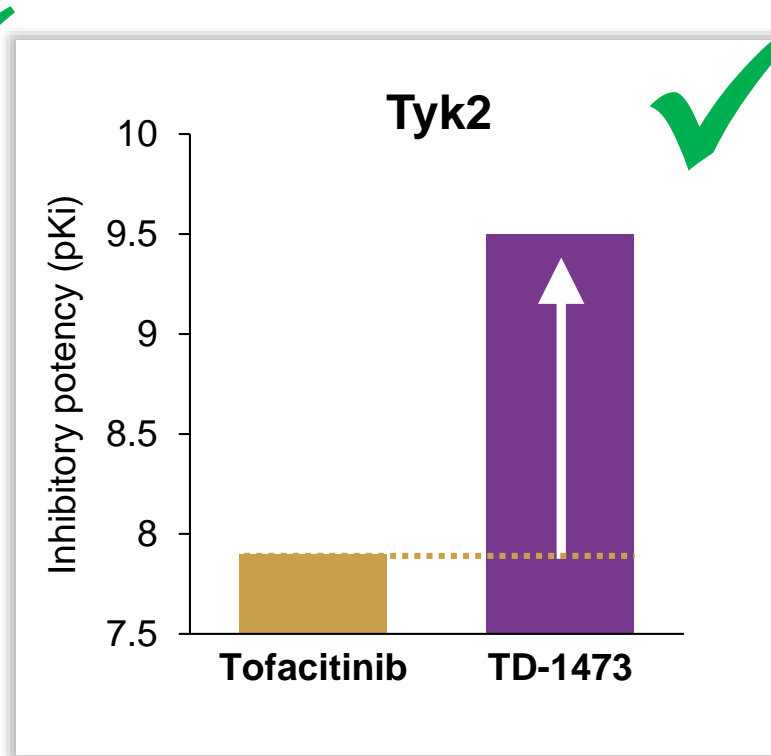


# TD-1473 is an oral, gut-selective pan-JAK inhibitor

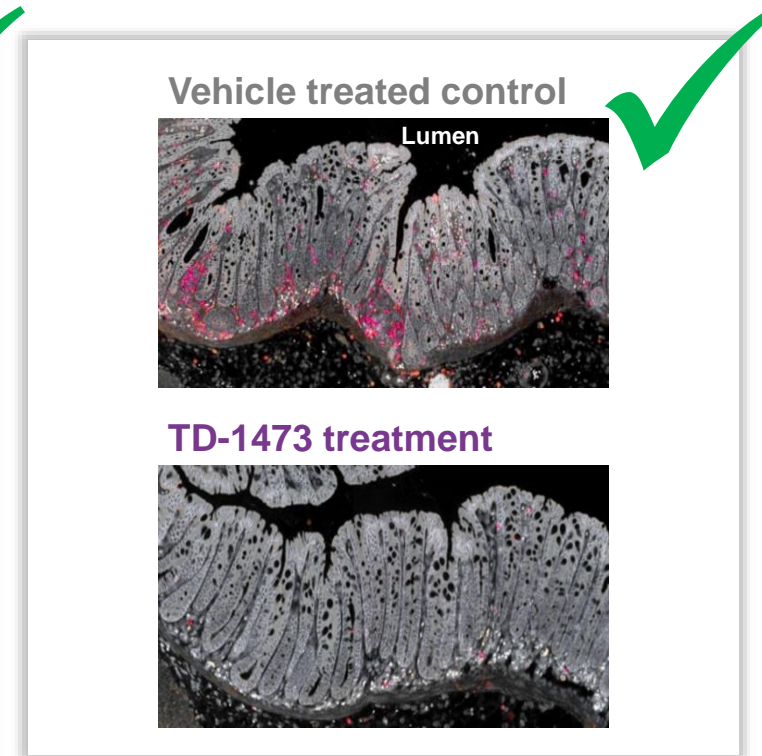
Preclinical data package for TD-1473 represents a potential breakthrough approach to the treatment of IBD



Gut selectivity

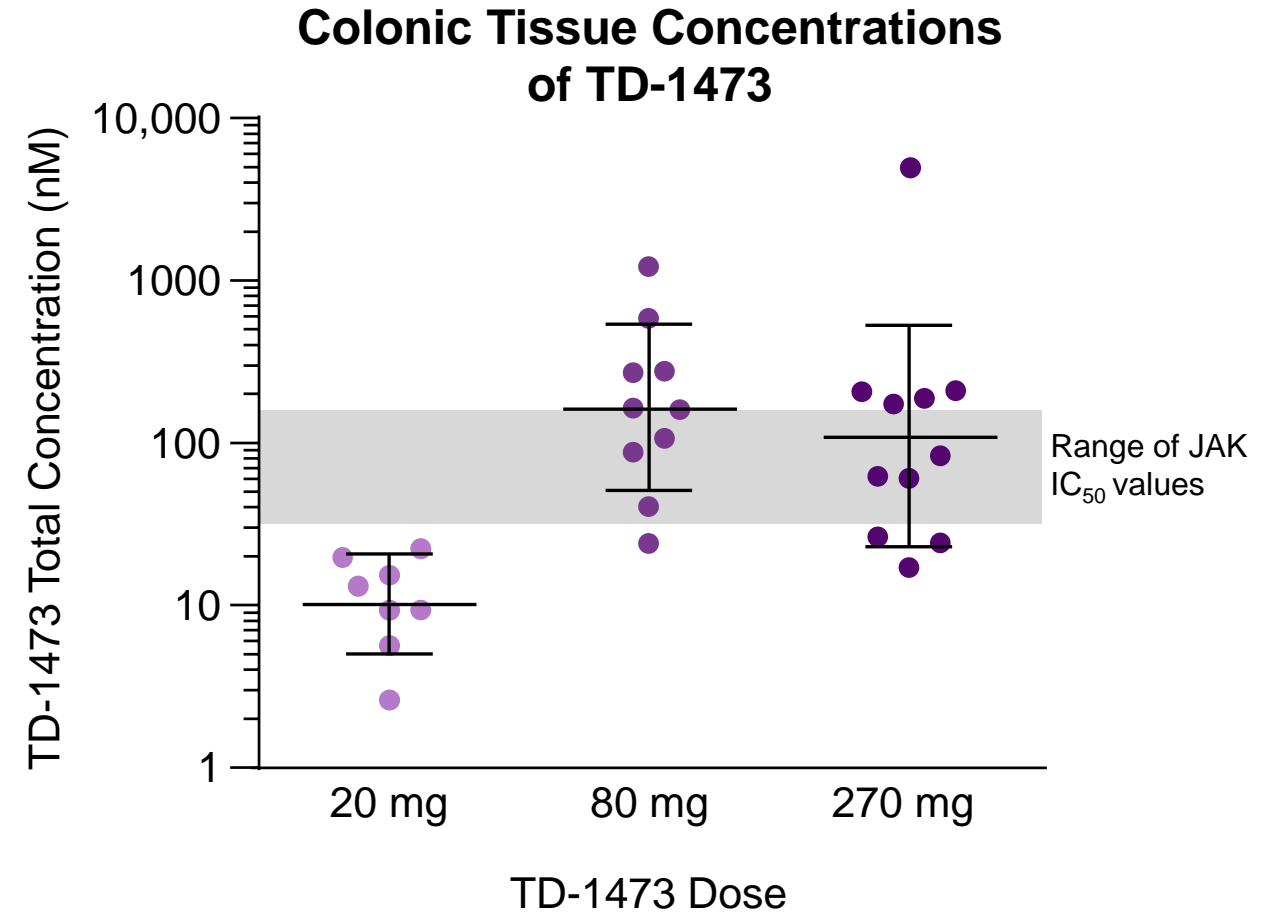
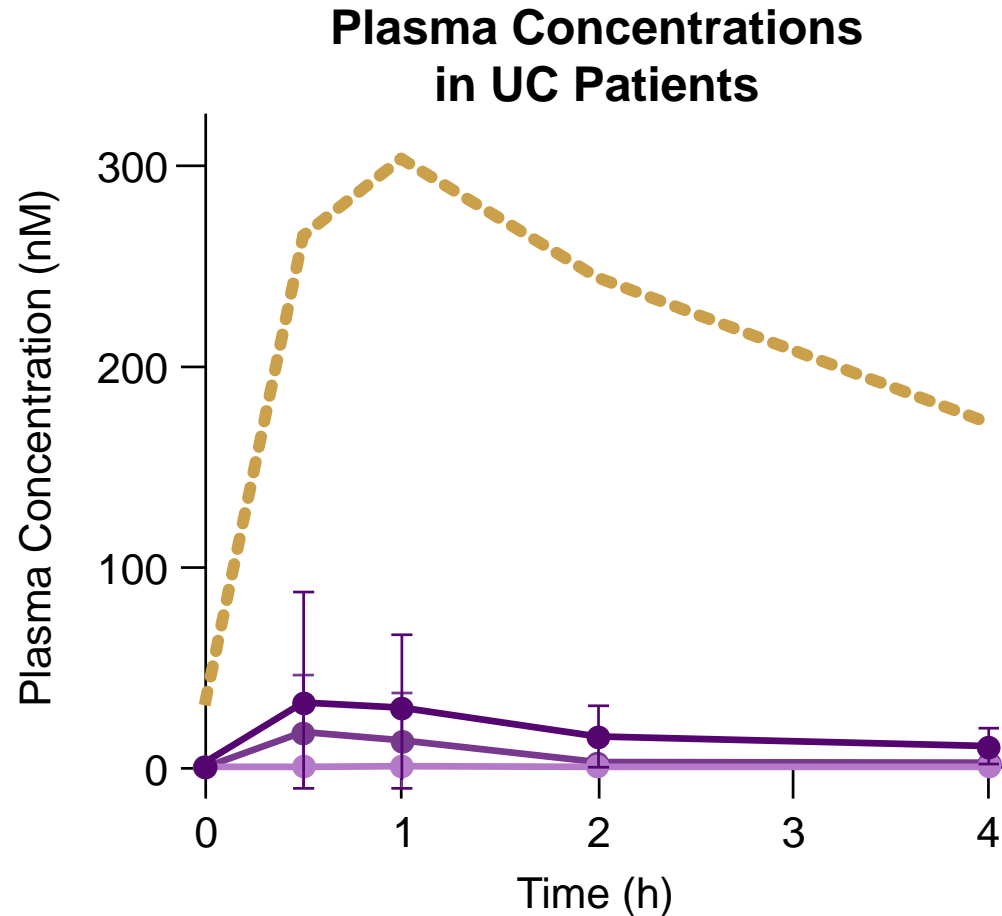


Potent inhibition of Tyk2



Anti-inflammatory activity in disease model

# Systemic exposures low; tissue concentrations at or above JAK inhibition levels



— Tofacitinib 10 mg BID\*

— TD-1473 20 mg

— TD-1473 80 mg

— TD-1473 270 mg

# TD-1473: Gut-selective pan-JAK inhibitor

Late-stage studies in Crohn's disease and ulcerative colitis

## Crohn's disease

Phase 2: 12 weeks (N=160)

Dose-finding induction

**DIONE**  
STUDY

→ **Active treatment extension: 48 weeks**

## Ulcerative colitis

Phase 2b/3: 8 weeks (N=240)

Dose-finding induction

**RHEA**  
PROGRAM

Phase 3: 8 weeks (N=640)

Dose-confirming induction

→ *Responders* → **Maintenance phase<sup>1</sup>: 44 weeks**



Phase 2 Crohn's and Phase 2b/3 ulcerative colitis studies ongoing



Phase 2 Crohn's and Phase 2b ulcerative colitis data expected 2021



Global collaboration with **Janssen** leverages joint development expertise and provides significant economics to **TBPH<sup>2</sup>**



# TD-5202

Organ-gut selective irreversible JAK3 inhibitor  
to treat inflammatory intestinal diseases



# Celiac disease has no current treatments and serious health consequences



**1%**

Global prevalence

**3.3M**

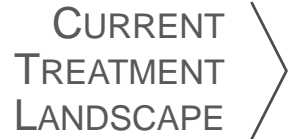
US patients<sup>1,2</sup>

**4–4.5x**

increase in US over past 50 y

**>2x**

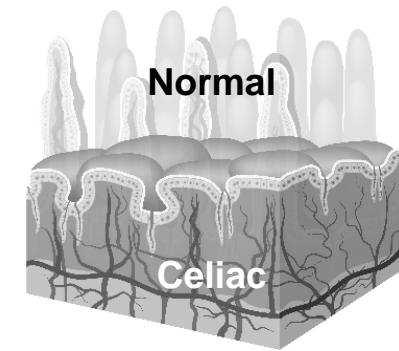
higher healthcare costs than controls



**No approved treatment**

Only available intervention is strict life-long gluten-free diet

**30%** of diagnosed patients are poorly controlled despite best dietary efforts<sup>3</sup>

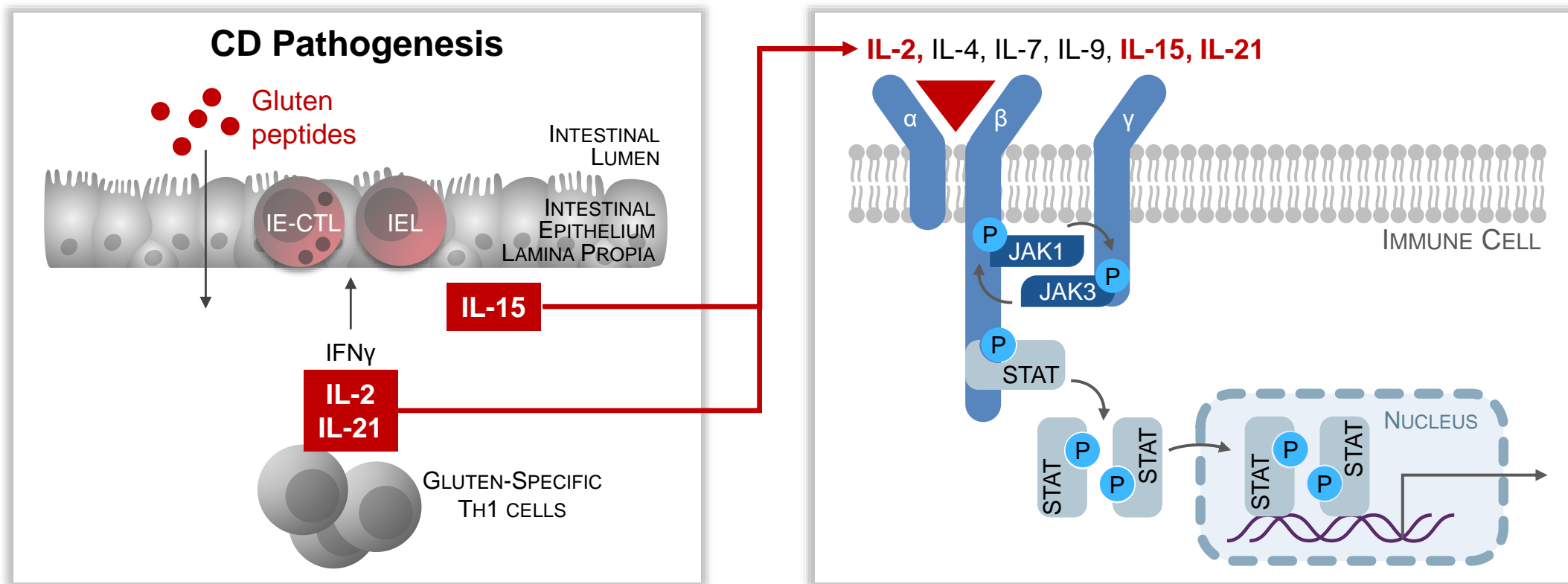


**TD-5202**

Organ-gut selective irreversible JAK3 inhibitor:  
potential to deliver significant value for both patients and payers



# JAK3-dependent cytokines play central role in pathogenesis of celiac disease



- ▶ Proof-of-relevance from recent positive Phase 2 data with systemic JAK3 inhibitor in alopecia areata, another T-cell mediated disease
- ▶ Localized JAK3 inhibition important to avoid systemic immunosuppression (genetic JAK3 deficiency leads to severe immunodeficiency)

# TD-5202 FIH Overall Results Summary

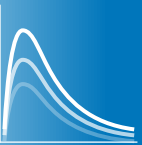
TD-5202: generally well-tolerated (single dose  $\leq 2000$  mg, multiple doses  $\leq 1000$  mg BID) for 10 consecutive days in healthy subjects



- ▶ No serious or severe AEs were reported
- ▶ All treatment-emergent AEs in TD-5202-treated subjects were mild in severity



- ▶ No clinically significant changes from baseline in vital signs and ECG assessments
- ▶ No clinically significant changes in chemistry or hematology parameters
  - No changes in NK cell count



- ▶ Systemic exposures were dose proportional from 100 to 1000 mg BID
- ▶ Low steady-state systemic exposures: mean  $C_{\max,ss}$  ~11-fold below the protein-adjusted JAK  $IC_{50}$  at the highest tested dose (1000 mg BID), consistent with a gut-selective approach



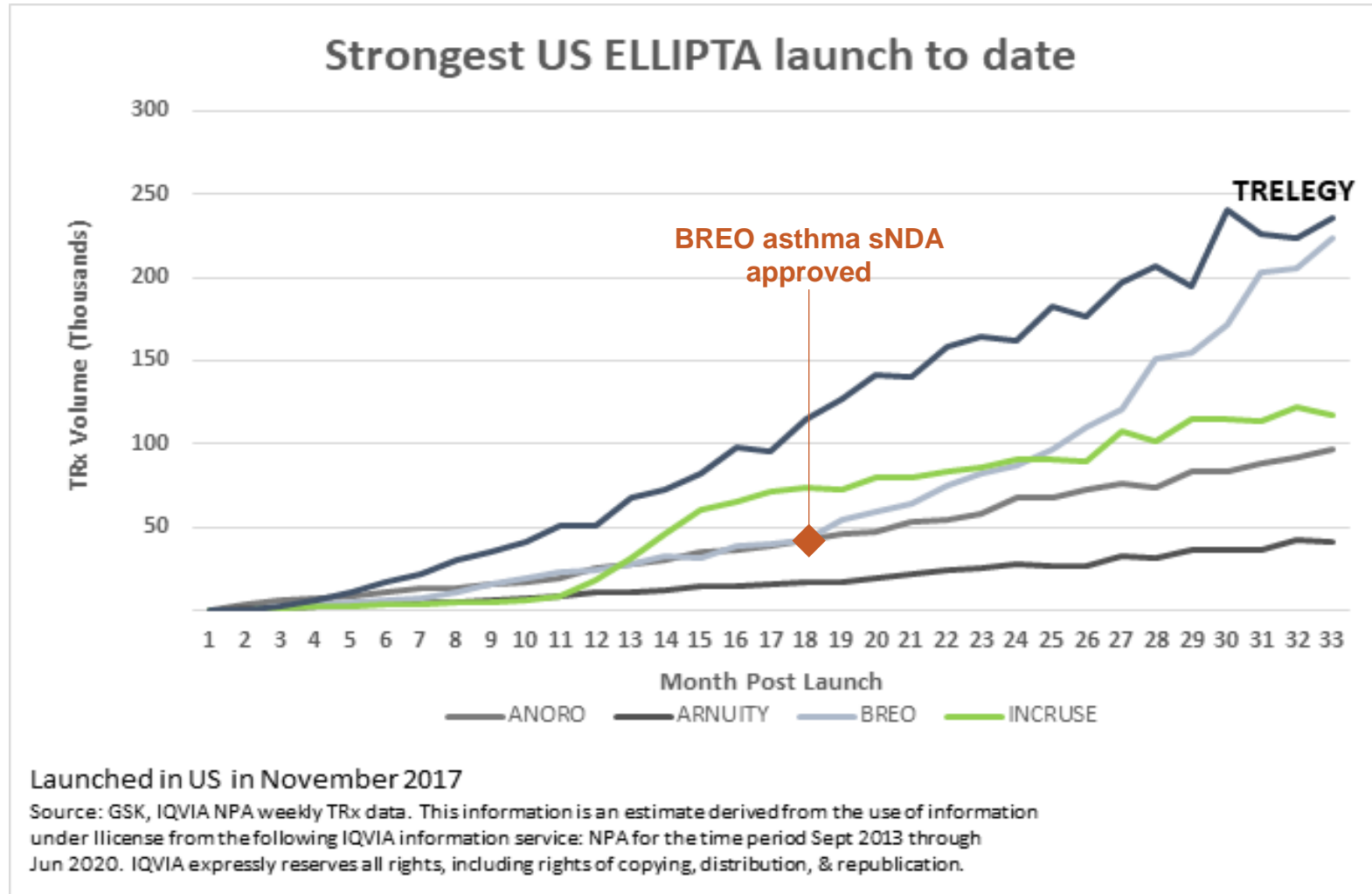
# Economic interest

GSK's TRELEGY ELLIPTA (FF/UMEC/VI):  
First and only once-daily single inhaler triple therapy



# Economic interest in GSK's TRELEGY

Upward-tiering royalties of ~5.5–8.5% of worldwide net sales<sup>1</sup>



## TRELEGY

- ✓ Q2 net sales of £194m (or \$241M)
- ✓ Grew market share with sales up 58% year-over-year
- ✓ Asthma sNDA approved September 9, 2020



# The Theravance Biopharma Difference



# Multiple potential milestones and value-driving catalysts expected in 2020, 2021 and beyond

## TD-5202

- ▶ Phase 1 topline data

## TD-0903

- ▶ Phase 1 study in healthy volunteers in the UK
- ▶ Phase 2 study in hospitalized patients with COVID-19 in the UK
  - Part 2: multi-center study conducted at hospital-based clinical sites globally, including the U.S.

## TD-8236

- ▶ Phase 1 Part C data in moderate to severe asthmatics
- ▶ Phase 2 allergen challenge data

## GSK's TRELEGY ELLIPTA<sup>1</sup>

- ▶ Asthma sNDA approved September 9, 2020

## Ampreloxetine

- ▶ Phase 3 4-week efficacy data

## TD-1473

- ▶ Phase 2b/3 ulcerative colitis topline data
- ▶ Phase 2 Crohn's topline data

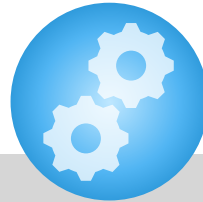
**Commercial progression of YUPELRI® and GSK's TRELEGY ELLIPTA**

# Creating transformational value for stakeholders

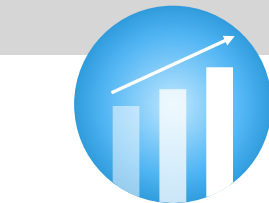
**Innovative research yielding  
organ-selective molecular  
designed assets**



**Proven development and  
commercial expertise**



**Strategic  
partnerships**



**Strong capital  
position**



**Value driving  
catalysts**



# Holding steadfast to our mission



Discovering...

Developing...

Commercializing...

...treatments for serious diseases to  
maximize patient benefit while  
minimizing patient risk

# About YUPELRI® (revefenacin) inhalation solution

YUPELRI® (revefenacin) inhalation solution is a once-daily nebulized LAMA approved for the maintenance treatment of COPD in the US.

Market research by Theravance Biopharma indicates approximately 9% of the treated COPD patients in the US use nebulizers for ongoing maintenance therapy.<sup>1</sup> LAMAs are a cornerstone of maintenance therapy for COPD and YUPELRI® is positioned as the first once-daily single-agent bronchodilator product for COPD patients who require, or prefer, nebulized therapy. YUPELRI®'s stability in both metered dose inhaler and dry powder device formulations suggest that this LAMA could also serve as a foundation for novel handheld combination products.

# YUPELRI® (revefenacin) inhalation solution

YUPELRI® inhalation solution is indicated for the maintenance treatment of patients with chronic obstructive pulmonary disease (COPD).

## Important Safety Information (US)

YUPELRI is contraindicated in patients with hypersensitivity to revefenacin or any component of this product.

YUPELRI should not be initiated in patients during acutely deteriorating or potentially life-threatening episodes of COPD, or for the relief of acute symptoms, i.e., as rescue therapy for the treatment of acute episodes of bronchospasm. Acute symptoms should be treated with an inhaled short-acting beta2-agonist.

As with other inhaled medicines, YUPELRI can produce paradoxical bronchospasm that may be life-threatening. If paradoxical bronchospasm occurs following dosing with YUPELRI, it should be treated immediately with an inhaled, short-acting bronchodilator. YUPELRI should be discontinued immediately and alternative therapy should be instituted.

YUPELRI should be used with caution in patients with narrow-angle glaucoma. Patients should be instructed to immediately consult their healthcare provider if they develop any signs and symptoms of acute narrow-angle glaucoma, including eye pain or discomfort, blurred vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal edema.

Worsening of urinary retention may occur. Use with caution in patients with prostatic hyperplasia or bladder-neck obstruction and instruct patients to contact a healthcare provider immediately if symptoms occur.

Immediate hypersensitivity reactions may occur after administration of YUPELRI. If a reaction occurs, YUPELRI should be stopped at once and alternative treatments considered.

The most common adverse reactions occurring in clinical trials at an incidence greater than or equal to 2% in the YUPELRI group, and higher than placebo, included cough, nasopharyngitis, upper respiratory infection, headache and back pain.

Coadministration of anticholinergic medicines or OATP1B1 and OATP1B3 inhibitors with YUPELRI is not recommended.

YUPELRI is not recommended in patients with any degree of hepatic impairment.