INTEGRIS-IPF Phase 2a Trial
Week 24 Analysis of Bexotegrast 320 mg Cohort

MAY 1, 2023

Disclaimers

This presentation has been prepared by Pliant Therapeutics, Inc. ("we," "us," "our," "Pliant" or the “Company”). The information set forth herein does not purport to be complete or to contain all of the information you may desire. Statements contained herein are made as of the date of this presentation unless stated otherwise, and this presentation shall not under any circumstances create an implication that the information contained herein is correct as of any time after such date or that information will be updated or revised to reflect information that subsequently becomes available or changes occurring after the date hereof.

This presentation includes forward-looking statements regarding Pliant’s proprietary drug candidates; the timing of the start and conclusion of ongoing or planned clinical trials, including the timing of, and our ability to achieve, anticipated milestones; future availability of clinical trial data; our plans for the future development of bexotegrast, including plans to initiate a Phase 2b clinical trial of bexotegrast in mid-2023; statements regarding the safety, tolerability, pharmacodynamics and therapeutic potential of bexotegrast; and other matters. Actual results could differ materially from those contained in any forward-looking statements as a result of various factors, including without limitation: that Pliant’s drug candidates do not advance in development or result in approved products on a timely or cost effective basis or at all; the cost, timing and results of clinical trials; our ability to manage and mitigate the impact of the ongoing COVID-19 pandemic; that many drug candidates that have completed early-stage trials do not become approved drugs on a timely or cost effective basis or at all; the ability to enroll patients in clinical trials; possible safety and efficacy concerns; regulatory developments; the ability of Pliant to protect its intellectual property rights; and unexpected costs, charges or expenses that reduce cash runway. Pliant’s pipeline programs are in various stages of pre-clinical and clinical development, and the process by which such pre-clinical or clinical therapeutic candidates could potentially lead to an approved therapeutic is long and subject to significant risks and uncertainties. Pliant undertakes no obligation to update forward-looking statements as a result of new information or otherwise. For a discussion of these and other risks and uncertainties, and other important factors, any of which could cause our actual results to differ from those contained in the forward-looking statements, see the section entitled “Risk Factors” and elsewhere in the Company's most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q on file with the Securities and Exchange Commission (the "SEC") and our other filings with the SEC.

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions, and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

This presentation concerns drugs that are under clinical investigation and which have not yet been approved for marketing by the U.S. Food and Drug Administration (the “FDA”). They are currently limited by Federal law to investigational use, and no representation is made as to their safety or effectiveness for the purposes for which they are being investigated.

Today's Speakers

Bernard Coulie, M.D., Ph.D.
President & CEO

Éric Lefebvre, M.D.
Chief Medical Officer

Greg Cosgrove, M.D., FCCP
Vice President,
Clinical Development

Toby Maher, M.D., Ph.D.
Director of ILD,
Keck School of Medicine,
USC

PLIANT

PLIANT

Bernard Coulie, M.D., Ph.D.
President and Chief Executive Officer

INTEGRIS-IPF – Introduction

Purpose of Evaluating Long-Term Treatment with Bexotegrast 320 mg

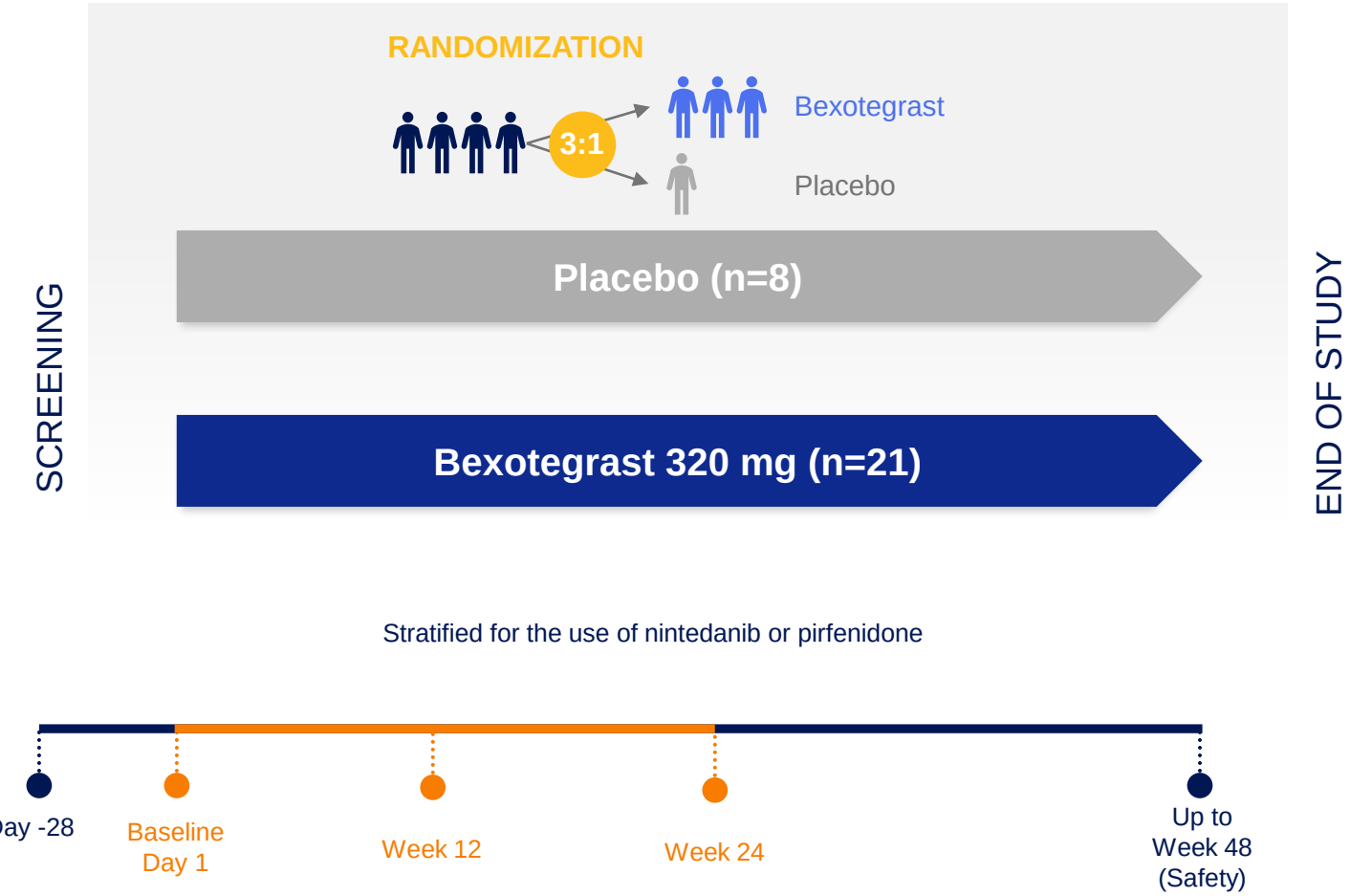
- Evaluate long term safety of the top dose planned for late-stage development
- Evaluate durability of treatment effect (FVC) including symptomatic improvement (cough)
- Assess long-term effects on pulmonary fibrosis as measured through QLF imaging

Key Takeaways from the Trial

- Bexotegrast continues to demonstrate a favorable safety and tolerability profile
- Bexotegrast demonstrated durable improvements across physiologic (FVC), radiographic (QLF) and symptomatic (cough) assessments versus placebo
- Data provide strong support to advance bexotegrast into late-stage development

PLIANT

INTEGRIS-IPF Study Design and Objectives – Bexotegrast 320 mg Cohort



Treatment duration per protocol: minimum of 24 weeks and a maximum of 48 weeks

PRIMARY AND SECONDARY ENDPOINTS

- Safety, tolerability, PK

EXPLORATORY ENDPOINTS

- Change in Forced Vital Capacity (FVC) over 12 and 24 weeks
- High Resolution CT-based Quantitative Lung Fibrosis (QLF) imaging
- Patient reported cough severity
- Effect on selected biomarkers

PLIANT

Executive Summary – INTEGRIS-IPF 320 mg

Bexotegrast 320 mg was Well Tolerated Over Long-Term Treatment Up to 40 Weeks

- Most TEAEs were mild or moderate in severity and not related to study drug
- No discontinuations due to TEAEs from Week 12 to Week 40
- No drug-related SAEs

Evidence of a Durable Treatment Effect on FVC Over 24 weeks

- Continued improvement in FVC versus placebo from Week 12 to Week 24
- 50% of bexotegrast-treated patients experienced an increase in FVC from baseline at Week 24 vs. zero on placebo
- Of bexotegrast-treated participants with FVC increase from baseline at Week 12, 89% maintained an increase at Week 24

Quantitative Lung Fibrosis (QLF) Evaluation Strongly Supports Bexotegrast's Antifibrotic Mechanism

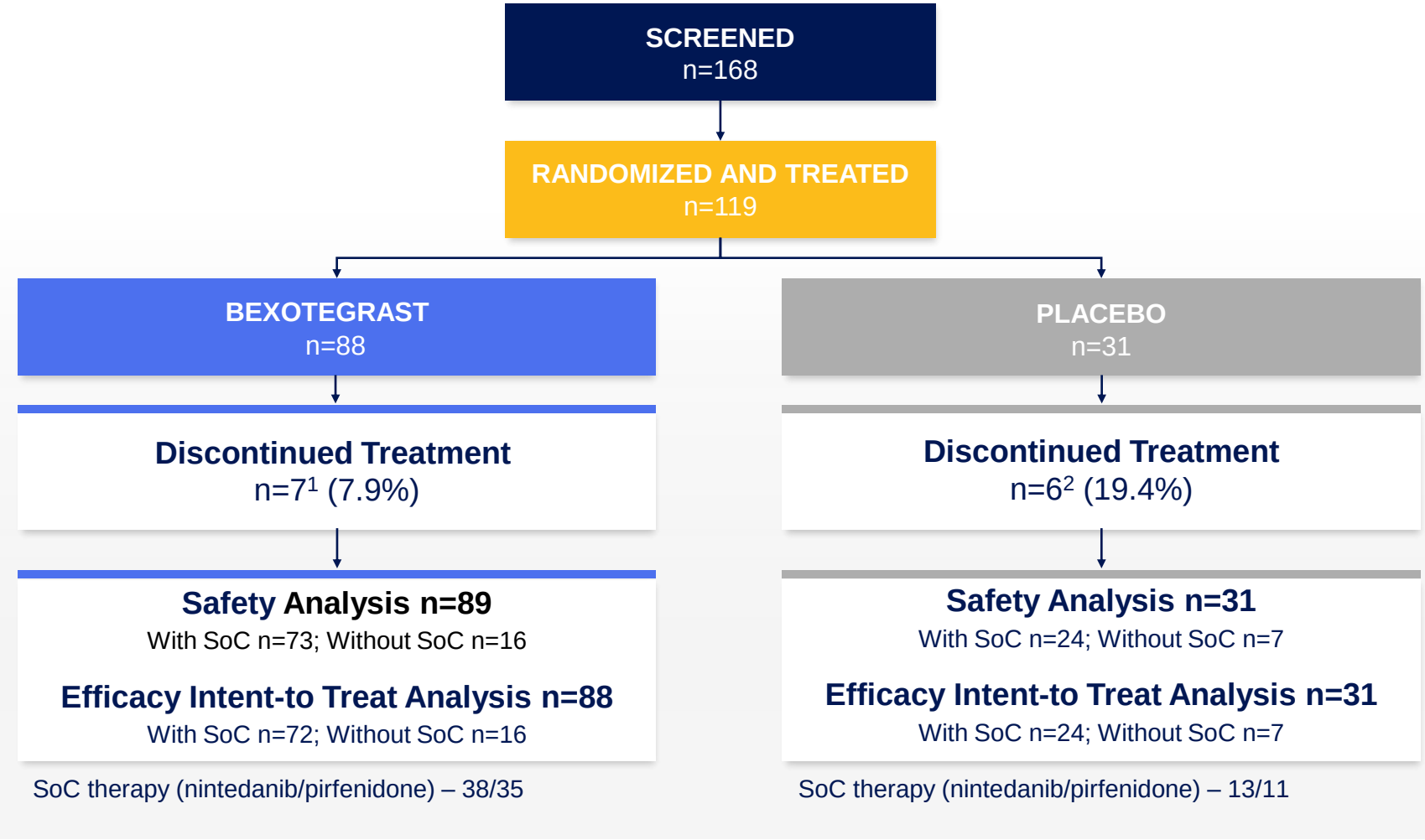
- QLF imaging showed stabilization of fibrosis with bexotegrast while placebo had clinically meaningful progression
- At Week 24, bexotegrast-treated participants were twice as likely to show stabilization or improvement of fibrosis relative to placebo

Evidence of Impact on Signs and Symptoms of IPF

- Bexotegrast reduced patient-reported cough severity in contrast to worsening on placebo

PLIANT

INTEGRIS-IPF – Final Participant Disposition



1- Adverse event (n=3); withdrawal of consent (n=3); physician decision (n=1); 2- Adverse event (n=2); withdrawal of consent (n=3); Lung transplant (n=1).
SoC = Standard of Care

PLIANT

Baseline Demographics

Characteristic	Bexotegrast 320mg (n=22)	Placebo (n=8)
Male sex, n (%)	21 (95.5)	5 (62.5)
Female sex, n (%)	1 (4.5)	3 (37.5)
Age (yr), mean (SD)	70.5 (7.14)	73.3 (7.98)
Race, n (%)		
White	21 (95.5)	8 (100)
Other / Not Reported / Unknown	1 (4.5)	0
Weight (kg), mean (SD)	88.5 (15.61)	80.6 (13.18)
Body-mass index (kg/m^2), mean (SD)	28.1 (4.08)	27.1 (2.95)

SD = Standard deviation; BMI = Body Mass Index; FVC = Forced Vital Capacity; DLCO = Diffusing capacity for carbon monoxide.

PLIANT

Baseline Disease Characteristics

Characteristic	Bexotegrast 320mg (n=22)	Placebo (n=8)
Time since diagnosis of IPF (mo), mean (SD)	34.4 (28.97)	41.6 (32.56)
Standard of Care Use, n (%)	18 (81.8)	6 (75.0)
None	4 (18.2)	2 (25.0)
Nintedanib	10 (45.5)	5 (62.5)
Pirfenidone	8 (36.4)	1 (12.5)
Duration of Standard of Care at Randomization (mo), mean (SD)	23.3 (21.76)	17.8 (20.30)
Baseline FVC (mL)		
Mean (SD)	3,192.0 (678.39)	2,658.4 (587.10)
Median	3,239.0	2,733.3
Percent of predicted value (%), mean (SD)	77.5 (15.83)	75.5 (18.90)
Percent of predicted DLCO, corrected for the hemoglobin level (%), mean (SD)	47.9 (13.18)	49.4 (12.91)
GAP Stage, n (%)		
GAP Stage I	7 (31.8)	3 (37.5)
GAP Stage II	12 (54.5)	5 (62.5)
GAP Stage III	2 (9.1)	0

BMI = Body Mass Index; mo = Month; SD = Standard Deviation; GAP Stage I = GAP Index 0-3; GAP Stage II = GAP Index 4-5; GAP Stage III = GAP Index 6-8.
GAP Index score (0-8) derived from Gender, Age, FVC, % Predicted and DLCO, % Predicted.

Safety Summary

AE, n (%) of Participants Reporting	Bexotegrast 320mg (n=22)	Placebo (n=8)
TEAE	20 (90.9)	7 (87.5)
Related to study drug	5 (22.7)	2 (25.0)
Serious TEAE	2 (9.1)	1 (12.5)
Related to study drug	0	0
TEAE of CTCAE Grade 3 or Higher	5 (22.7)	1 (12.5)
Related to study drug	1 (4.5) [1]	0
TEAE Leading to Interruption of Study Drug	4 (18.2) [2]	0
TEAE Leading to Withdrawal of Study Drug	3 (13.6) [2,3,4]	1 (12.5)
TEAE Leading to Early Termination from Study	3 (13.6) [2,3,4]	0
TEAE Leading to Death	1 (4.5) [3]	0

1 – Blood pressure increased; 2 – Abdominal pain/Diarrhea in participant with pre-existing ulcerative colitis;
3 – Acute respiratory failure in a GAP Stage III participant with pre-existing atrial fibrillation 8 days following elective atrioventricular node ablation; 4 – Diarrhea in participant with concomitant use of nintedanib

AE = Adverse Event; TEAE = Treatment Emergent Adverse Event; SAE = Serious Adverse Events. Adverse events coded using MedDRA v. 24.0.
TEAE is defined as any AE starting (or worsening) on or after the date of first dose.

PLIANT

Most Frequently Reported TEAEs Were Not Related to Study Drug

AE, n (%) of Participants Reporting	Bexotegrast 320 mg (n=22)	Placebo (n=8)
Most frequent TEAEs (> 10% in at least one arm)		
Diarrhea	7 (31.8)	3 (37.5)
Related to study drug	4 (18.2)[1]	0
Dyspnoea	5 (22.7)	1 (12.5)
Related to study drug	0	0
Idiopathic Pulmonary Fibrosis	4 (18.2)	0
Related to study drug	0	0
Cough	3 (13.6)	2 (25.0)
Related to study drug	0	0
Upper respiratory tract infection	2 (9.1)	1 (12.5)
Related to study drug	0	0

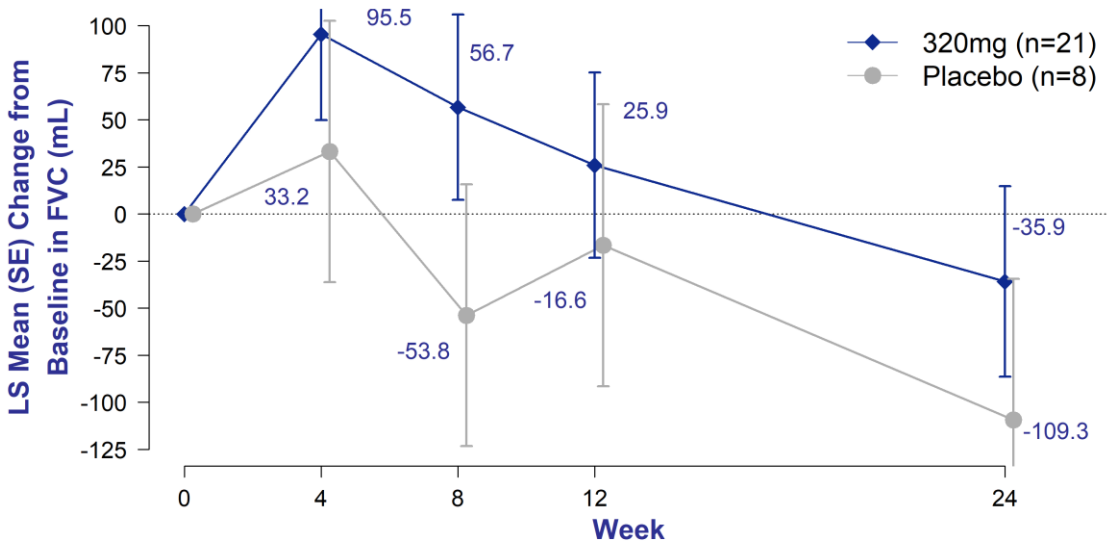
1- Participant with history of sigmoid volvulus, colectomy and colo-colonic anastomosis fell with trauma to his back. Following analgesic treatment with narcotics and NSAIDs, he was hospitalized for sigmoid colon ileus.

TEAE = Treatment Emergent Adverse Event; SAE = Serious Adverse Events. Adverse events coded using MedDRA version 24.0.
TEAE is defined as any AE starting (or worsening) on or after the date of first dose

PLIANT

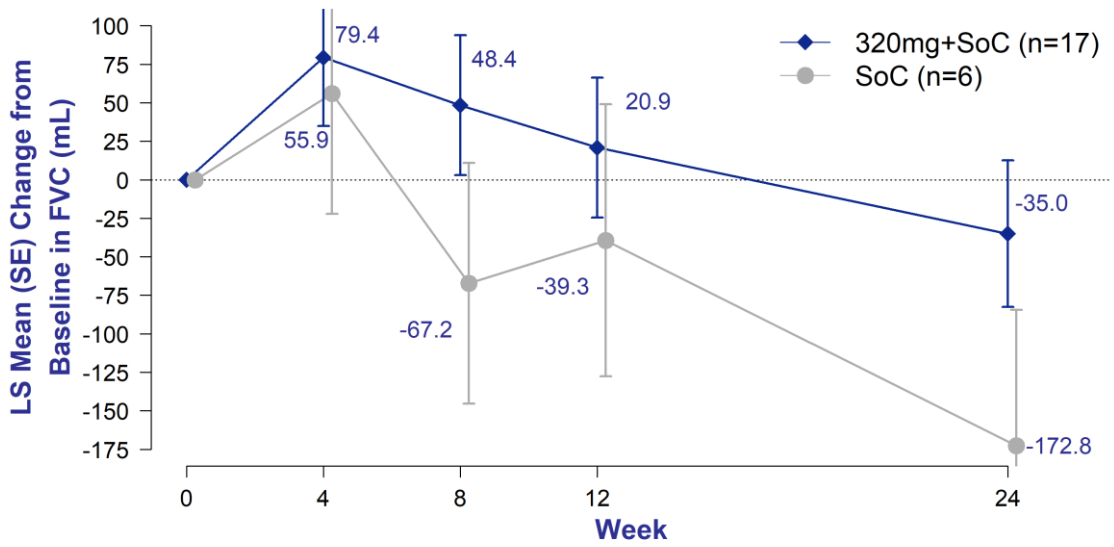
FVC Change from Baseline over 24 Weeks
ITT Population vs. SoC Sub-Group

ITT Population



Bexotegrast reduced FVC decline by 67% relative to placebo at Week 24

Standard-of-Care Sub-Group



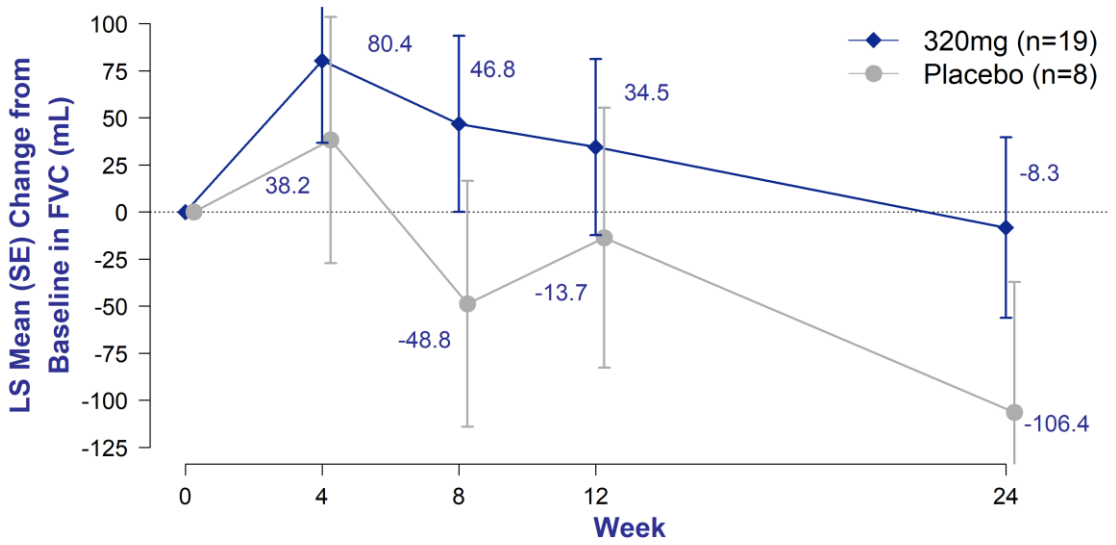
Bexotegrast + SOC reduced FVC decline by 80% relative to SOC alone at Week 24

Participants not on SoC not shown due to small sample size, n=4 (320 mg) and n=2 (placebo)
FVC = forced vital capacity; ITT=intent to treat; SoC = standard of care (nintedanib or pirfenidone)

FVC Change from Baseline over 24 Weeks – Sensitivity Analysis

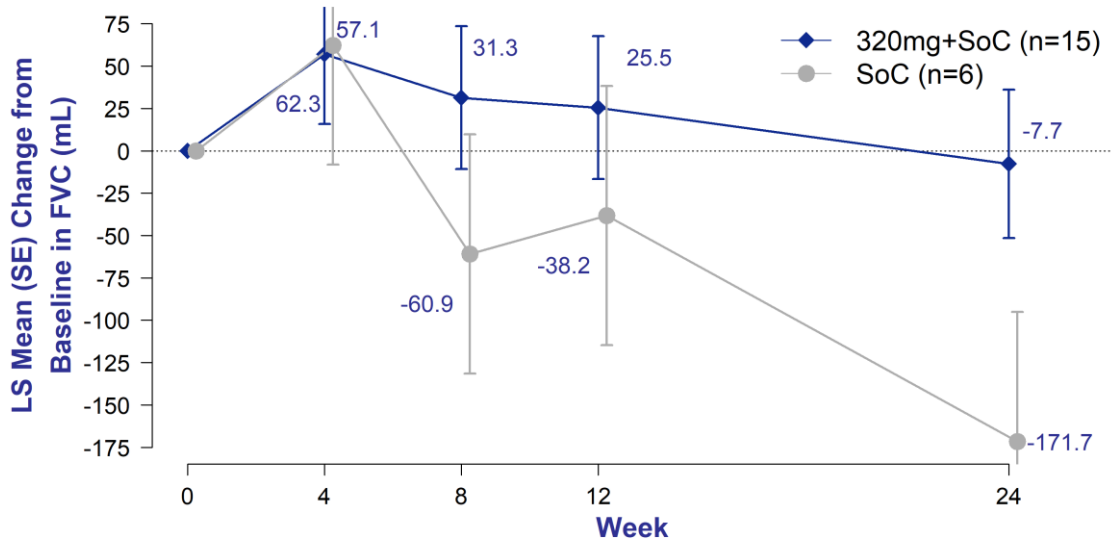
Trimmed Mean Sensitivity Analysis[1]

ITT Population



Bexotegrast reduced FVC decline by 92% relative to placebo at Week 24

Standard-of-Care Sub-Group

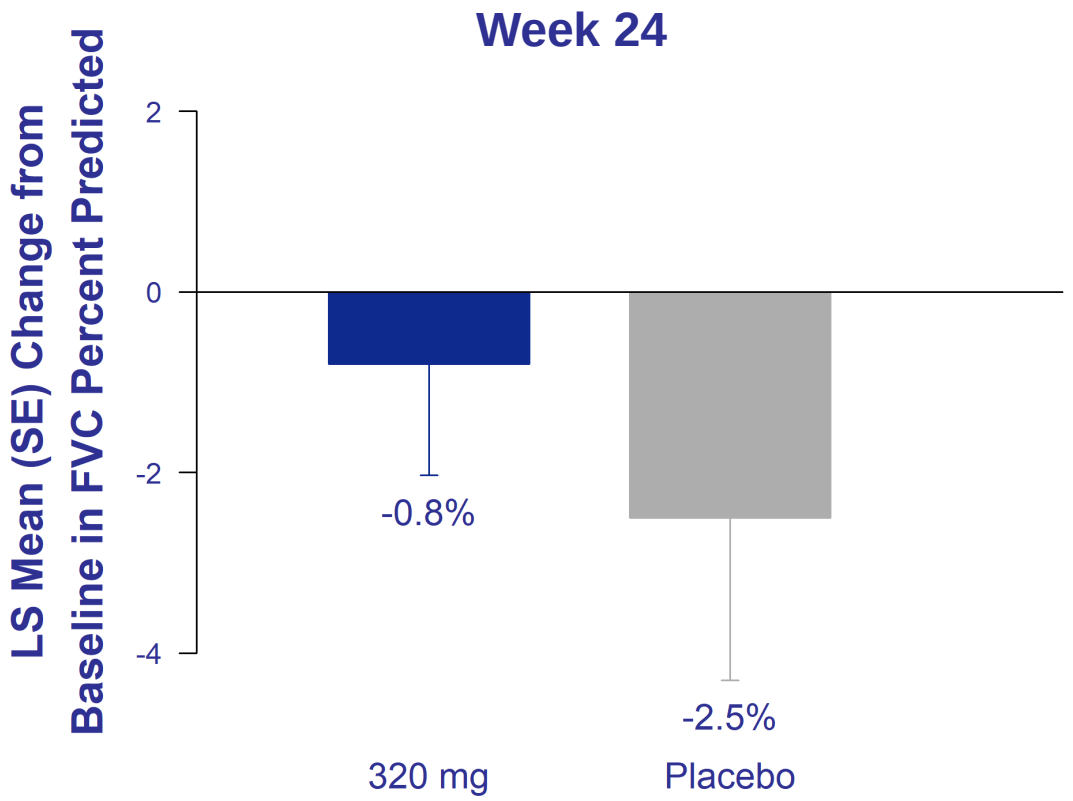


Bexotegrast + SOC reduced FVC decline by 96% relative to SOC alone at Week 24

1 – Trimmed Mean Sensitivity Analysis excludes the two bexotegrast-treated participants with the highest and lowest FVC values at Week 24.
Participants not on SoC not shown due to small sample size, n=4 (320 mg) and n=2 (placebo)
FVC = forced vital capacity; ITT=intent to treat; SoC = standard of care (nintedanib or pirfenidone)

PLIANT

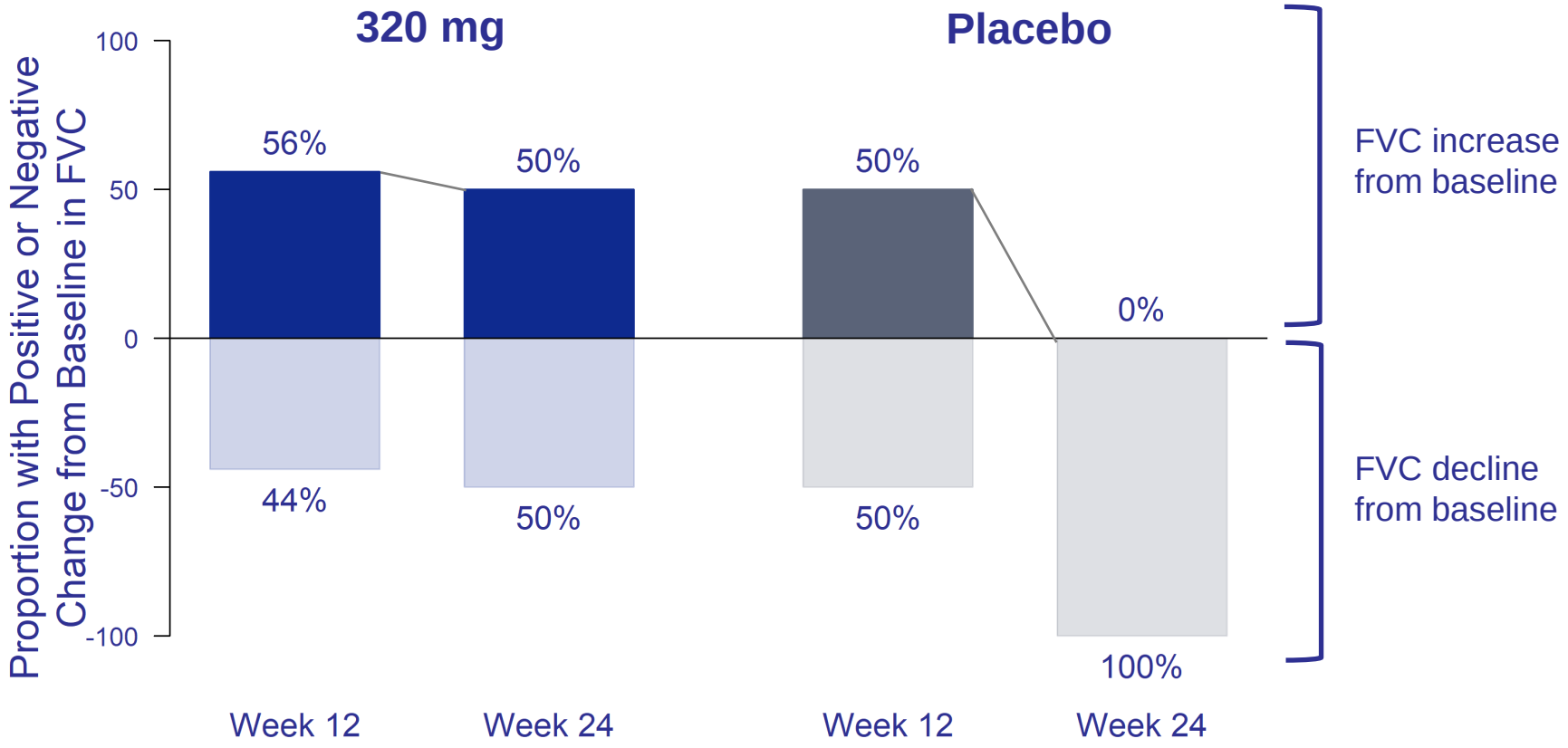
FVC Percent Predicted Change from Baseline at Week 24
ITT Population



Bexotegrast reduced the decline in FVCpp by 68% relative to placebo

FVC = forced vital capacity; ITT=intent to treat.

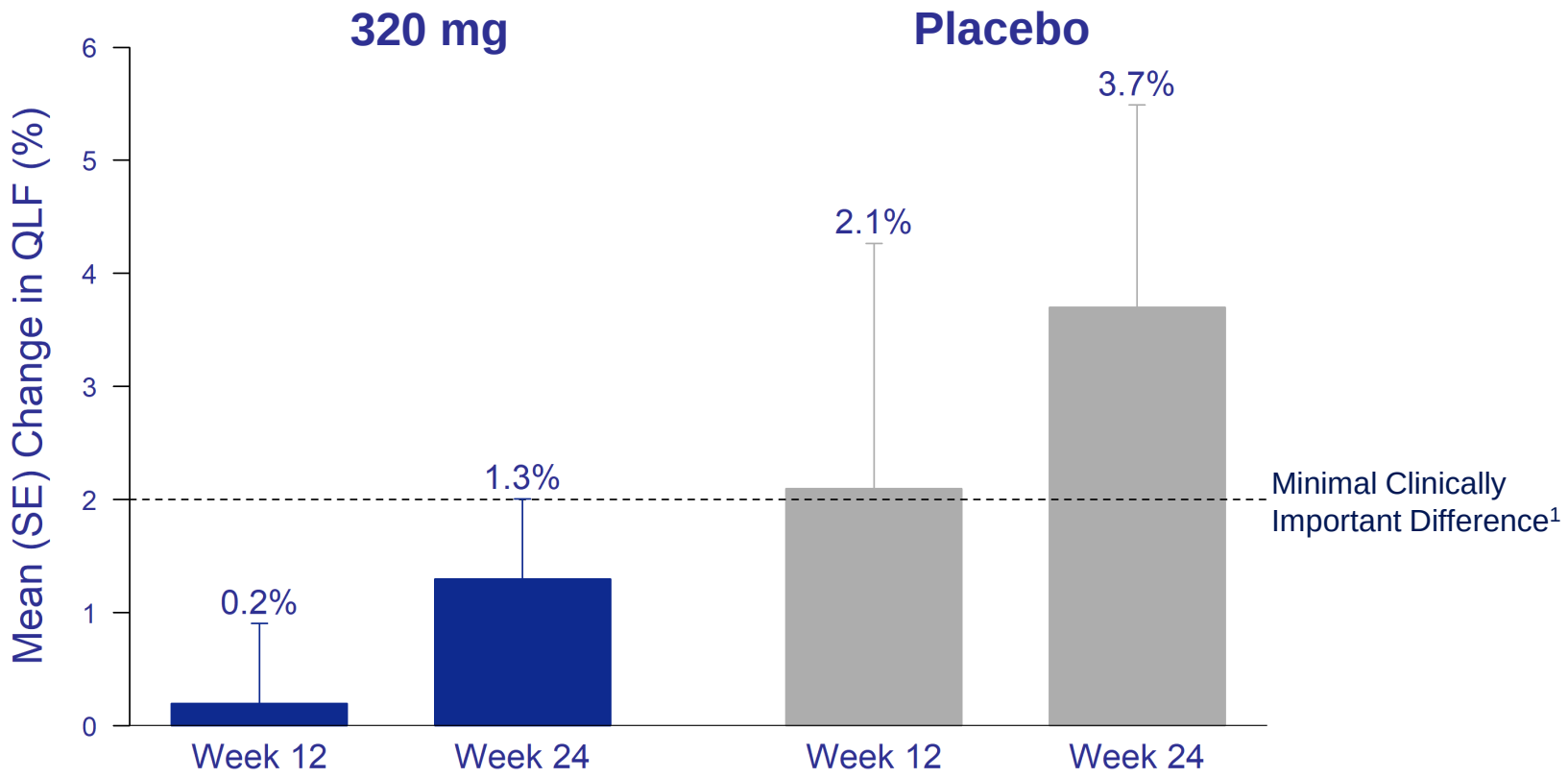
Bexotegrast Demonstrated Durable Increase in FVC at Week 24
ITT Population



89% of bexotegrast-treated participants with FVC increase at Week 12 maintained an increase at Week 24

FVC = forced vital capacity; ITT=intent to treat.
Participants with missing data not included

QLF Mean Percent Change from Baseline at Weeks 12 and 24
Per CT Protocol Population

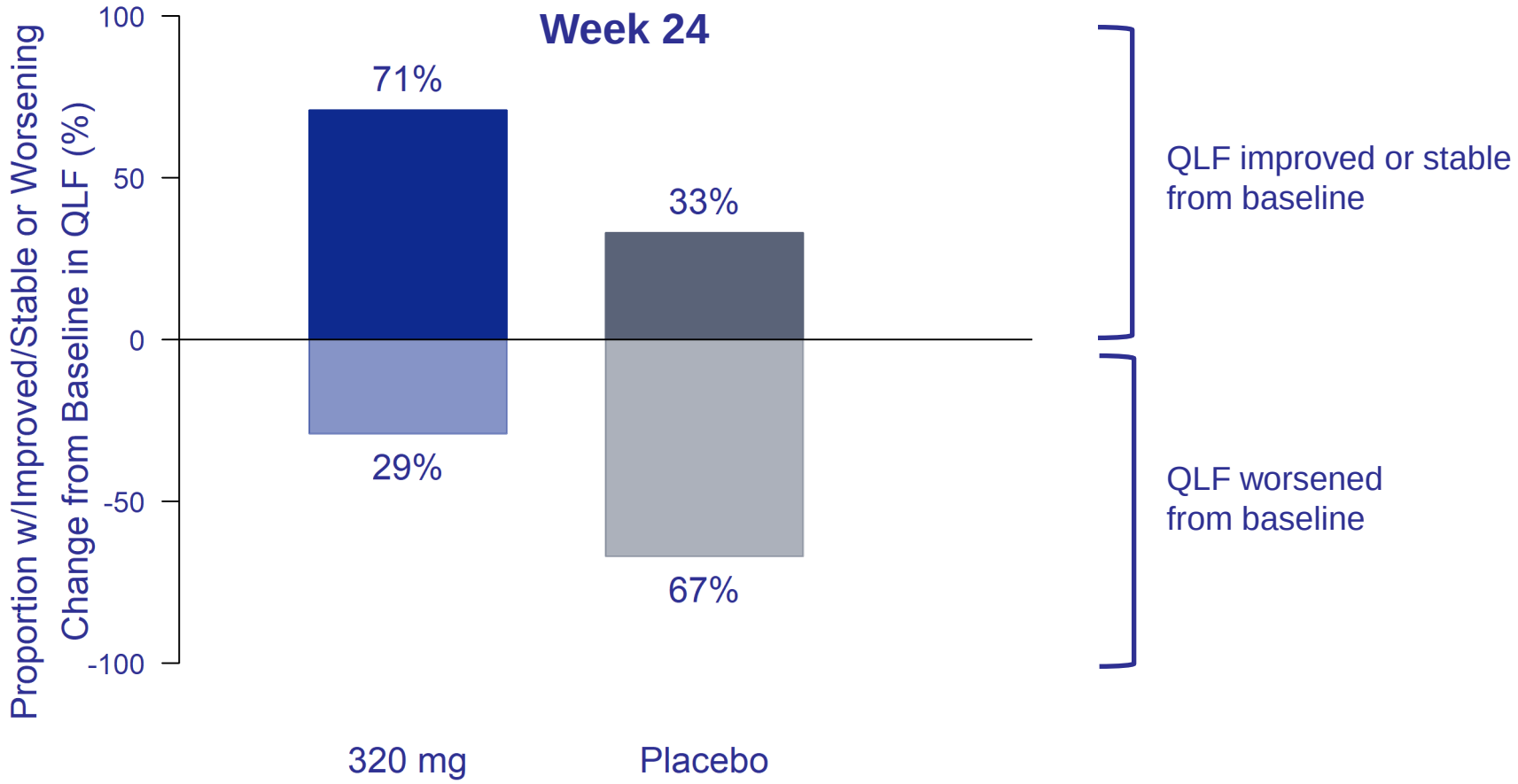


Bexotegrast group demonstrated stabilization of fibrosis, in contrast to placebo group which showed clinically meaningful progression at Weeks 12 and 24

QLF = quantitative lung fibrosis; QLF Minimal Clinically Important Difference for whole lung: 2%; stable disease (-2%, 2%)
Per CT protocol population: Participants with both baseline and post baseline high resolution computed tomography (HRCT) scans meeting evaluability criteria per Imaging Charter
1 - *EU Radiology* 2020 30:726-734

PLIANT

More Patients on Bexotegrast Showed Stabilization of Fibrosis at Week 24
Per CT Protocol Population

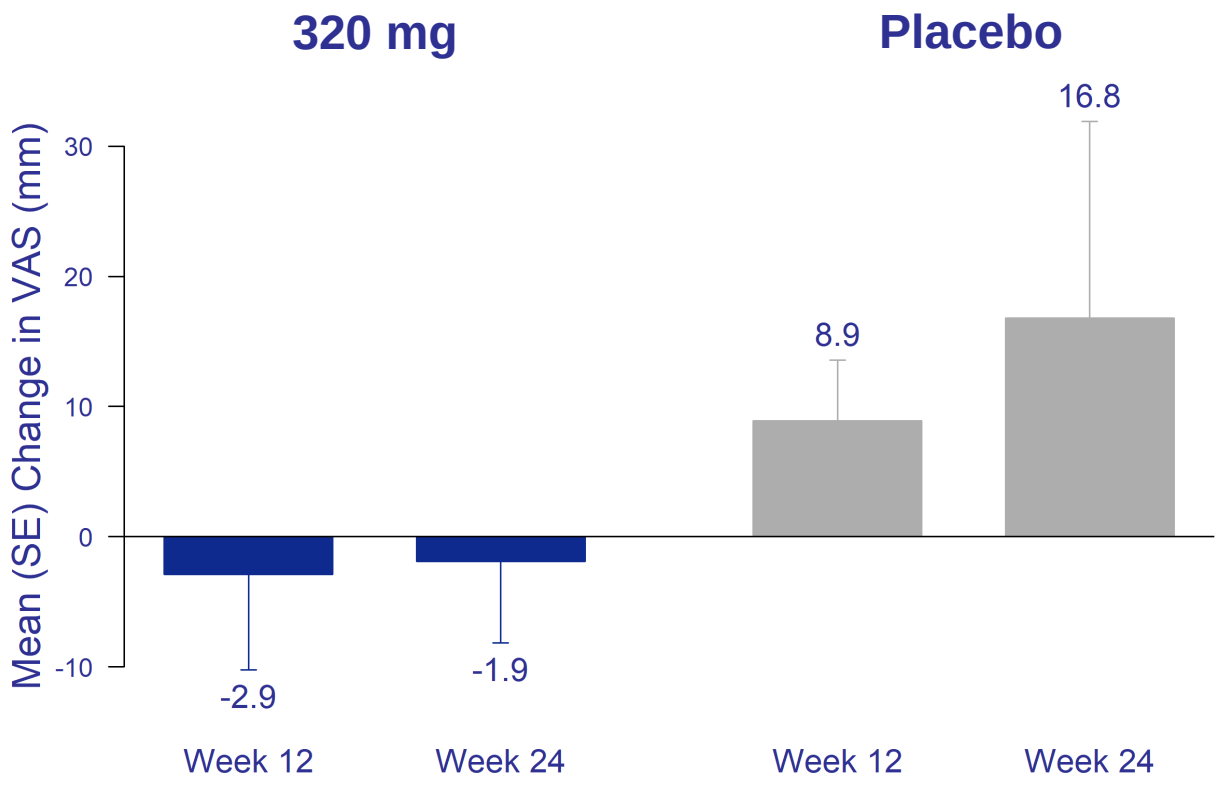


At Week 24, bexotegrast-treated participants were more than twice as likely to show stabilization or improvement of fibrosis relative to placebo

QLF = quantitative lung fibrosis; QLF Minimal Clinically Important Difference for whole lung: 2%; Improved disease <-2%, Stable disease (-2%, 2%), Worsened disease >2%
Per CT protocol population: Participants with both baseline and post baseline high resolution computed tomography (HRCT) scans meeting evaluability criteria per Imaging Charter

PLIANT

Cough Severity Visual Analog Scale (VAS) Change from Baseline
ITT Population

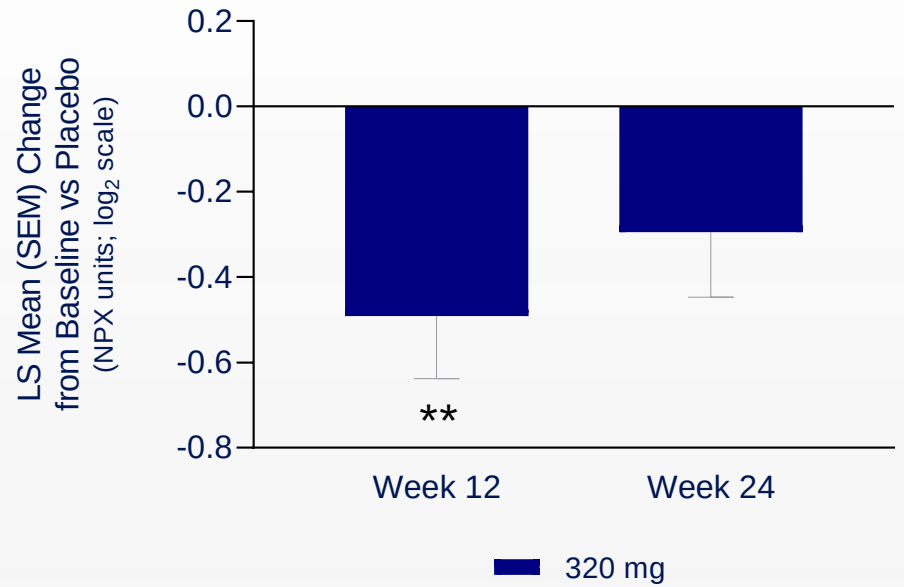


Chronic cough in IPF is an independent predictor of disease progression and mortality[1]

1 - *Respirology* 2011; 16: 969–975.
Cough VAS measures patient reported cough severity over last 2 weeks on scale of 0-100 mm

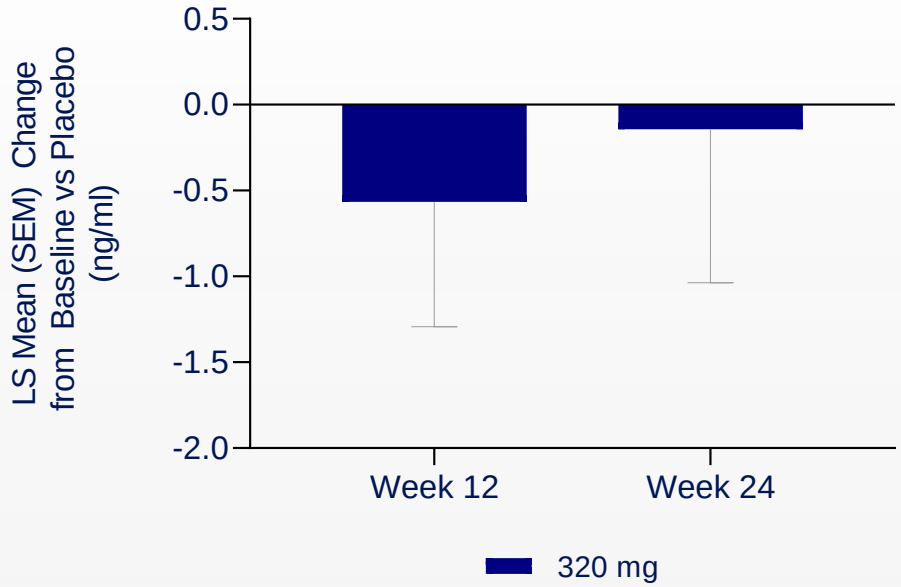
Bexotegrast Reduced Circulating Biomarkers ITGB6 and PRO-C3 Relative to Placebo

Plasma Integrin beta-6 (ITGB6)



** p < 0.01 vs placebo

Serum PRO-C3
Type III collagen synthesis neoepitope



Elevated integrin beta-6 plasma levels shown to be associated with ILD progression over 12 months[1]

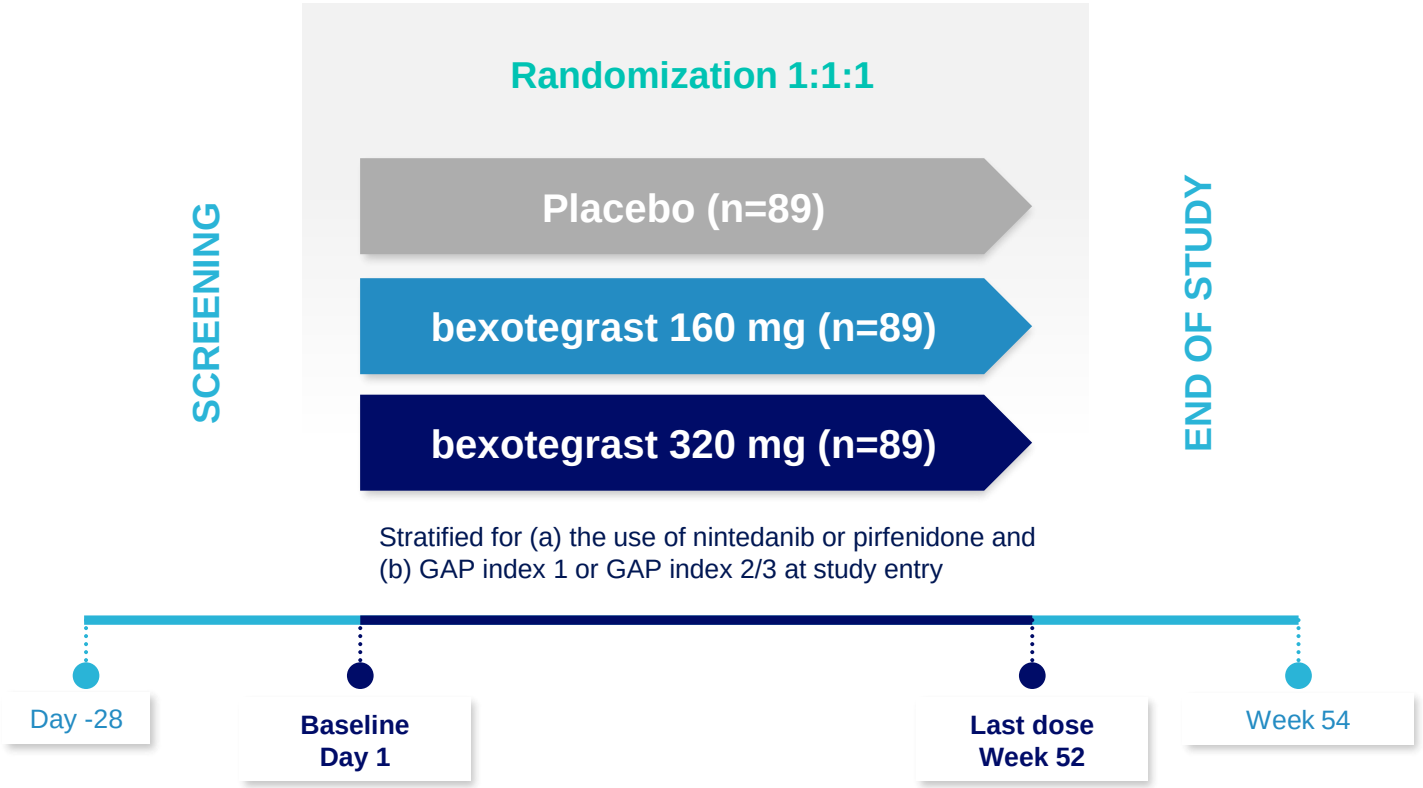
PRO-C3 shown to be elevated in patients with IPF and associated with progressive disease[2]

1- *Lancet Respir Med.* 2022 Jun;10(6):593-602; 2 - *Respir Res.* 2019 Jul 12;20(1):148.

LS = Least Squares; SE = Standard Error; Integrin beta-6 data reported in relative quantitation log_2 scale

PLIANT

BEACON-IPF Phase 2b Study Design



PRIMARY ENDPOINT

- Change from baseline in absolute FVC (mL) at Week 52

SECONDARY ENDPOINTS

- Time to disease progression (≥10% absolute decline from baseline in (FVCpp), respiratory-related hospitalization, or all-cause mortality)
- Change from baseline in absolute FVC (mL) in participants on and off background therapy
- Change from baseline in Living with Pulmonary Fibrosis total score at Week 52
- Safety and Tolerability

PLIANT

PLIANT

Toby Maher, M.D., Ph.D.,

Professor of Medicine and Director of Interstitial Lung Disease at Keck School of Medicine, University of Southern California, Los Angeles

PLIANT

Bernard Coulie, M.D., Ph.D.
President and Chief Executive Officer

Question and Answer Session

INTEGRIS-IPF Phase 2a Trial

Week 24 Analysis of Bexotegrast 320 mg Cohort