

# **Forward-looking statements**



This presentation may contain forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance, or events to differ materially from those expressed or implied in these statements. These forward-looking statements are identified by their use of terms and phrases such as "aim", "ambition", "anticipate", "believe", "could", "estimate", "expect", "goals", "intend", "may", "milestones", "objectives", "outlook", "plan", "probably", "project", "risks", "schedule", "seek", "should", "target", "will" and similar terms and phrases. Examples of forward-looking statements may include statements with respect to timing and progress of Pharming's preclinical studies and clinical trials of its product candidates, Pharming's clinical and commercial prospects, and Pharming's expectations regarding its projected working capital requirements and cash resources, which statements are subject to a number of risks, uncertainties and assumptions, including, but not limited to the scope, progress and expansion of Pharming's clinical trials and ramifications for the cost thereof; and clinical, scientific, regulatory and technical developments. In light of these risks and uncertainties, and other risks and uncertainties that are described in Pharming's 2021 Annual Report and the Annual Report on Form 20-F for the year ended December 31, 2021, filed with the U.S. Securities and Exchange Commission, the events and circumstances discussed in such forward-looking statements may not occur, and Pharming's actual results could differ materially and adversely from those anticipated or implied thereby. All forward-looking statements contained in this presentation are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Any forwardlooking statements speak only as of the date of this presentation and are based on information available to Pharming as of the date of this presentation. Pharming does not undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information.



# FDA approval call agenda





### Introduction

Sijmen de Vries, Chief Executive Officer



### **APDS Overview**

Anurag Relan, Chief Medical Officer



## Joenja® (leniolisib) Label and Data

Anurag Relan, Chief Medical Officer



### **Commercial Launch Plans**

Stephen Toor, Chief Commercial Officer



### **Financial Considerations**

Jeroen Wakkerman, Chief Financial Officer



## Pharming Strategy and Closing Remarks

Sijmen de Vries, Chief Executive Officer

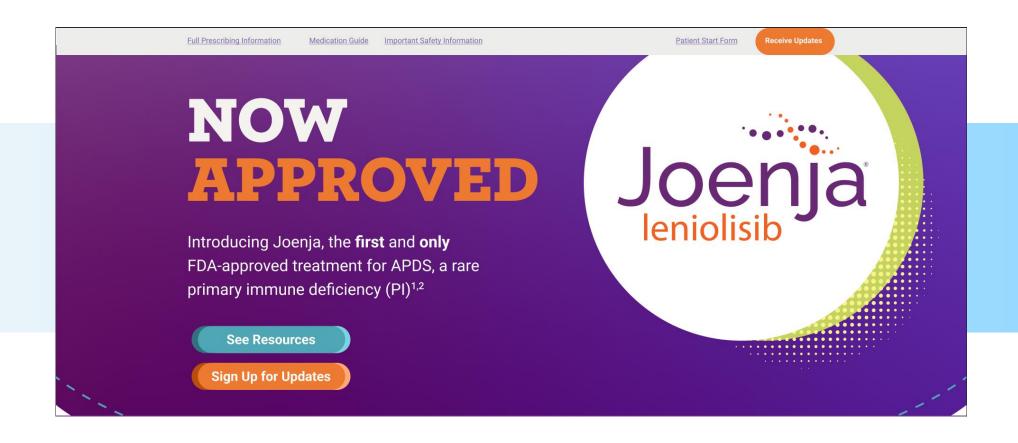


Q&A



# Joenja® is now approved





# Joenja® – looking ahead



## Joenja® (leniolisib) is the first and only FDA-approved treatment for APDS

- ◆ Targeted treatment of APDS in patients aged 12 years and older
- PI3Kδ inhibitor with demonstrated efficacy, safety and tolerability in a 12-week randomized placebo-controlled trial for APDS
- Development ongoing for pediatric patients younger than 12 years

## We are prepared for Joenja® launch in early April

- Joenja® is Pharming's second commercial rare disease product
- Experienced and dedicated commercial and medical teams in place
- APDS Assist program to help patients with medication access, education, and support services

## **MAA** under review by EMA CHMP

Pharming is committed to transforming the lives of patients who suffer from rare diseases



# APDS is a rare, primary immunodeficiency (PI) first characterized in 2013





APDS affects ~1500 patients worldwide\*
To date, Pharming has identified >500 of these patients



Until now, treatments for APDS have addressed the symptoms of the disease which manifest early in childhood, but not the root cause of APDS

Without an indicated treatment specifically for APDS, physicians could only manage symptoms

(as of December 2022 for Australia, Canada, Europe, Japan, US, UK)



The signs and symptoms of APDS vary widely, even among family members with the same genetic variant, resulting in potential delays in diagnosis and care



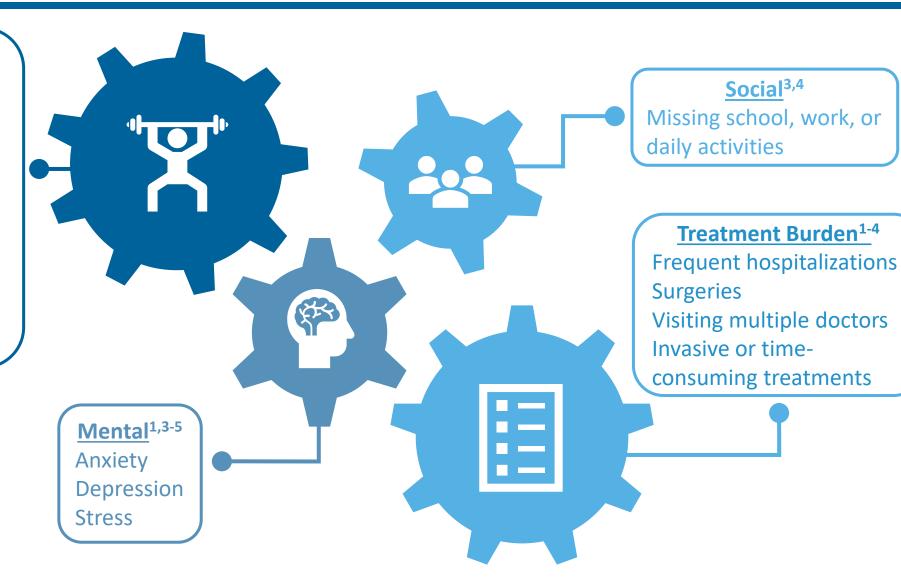
A genetic test can provide a definitive diagnosis of APDS

# **APDS** can impact many facets of life



## Physical<sup>1,2</sup>

Frequent infections Swollen glands Shortness of breath Coughing/wheezing Chest or joint pain Fatigue Inability to exercise Hearing loss Diarrhea Skin problems



APDS, activated phosphoinositide 3-kinase  $\delta$  syndrome.

<sup>1.</sup> Coulter TI, et al. J Allergy Clin Immunol. 2017;139(2):597-606. 2. Elkaim E, et al. J Allergy Clin Immunol. 2016;138(1):210-218. 3. Rider NL, et al. J Clin Immunol. 2017;37(5):461-475.

# Heterogeneous, evolving symptomology can often lead to missed diagnoses



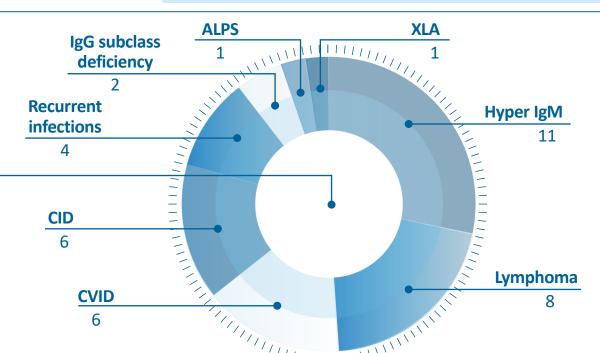
## Timeline of the most common pathologies\* seen in APDS<sup>1-4</sup>

### Median age at diagnosis:

12 years (7-year median diagnosis delay)

<1 year (range, 1 month-10 years)	3 years (range, 1-6 years)	5 years (range, 1-18 years)	10.5 years (range, 6-15 years)	11.2 years <sup>†</sup> (range, 18 months-39 years)	<b>18 years</b> (range, 1.5-40 years)
Sinopulmonary infections	Benign lymphoproliferation	Enteropathy	Autoimmunity	Bronchiectasis	Malignancy
			Cytopenias, arthritis, or other dysregulation <sup>‡</sup>		

APDS has often been diagnosed as another PI or condition, causing delays in diagnosis<sup>1</sup>



identification
of symptoms,
increased genetic
testing, and earlier
diagnosis are
needed

<sup>\*</sup>Pathologies can occur at any time.

<sup>†</sup>In Elkaim APDS2 cohort, median age of bronchiectasis is 13; in Maccari ESID cohort, median age is 11.2.

<sup>&</sup>lt;sup>‡</sup>No median ages are available for these manifestations.

ALPS, autoimmune lymphoproliferative syndrome; CID, combined immunodeficiency; CVID, common variable immune deficiency; ESID, European Society for Immunodeficiencies; HIGM, hyper immunoglobulin M syndrome; IgG, immunoglobulin G; PI3Kδ, phosphoinositide 3-kinase delta; XLA, X-linked agammaglobulinemia.

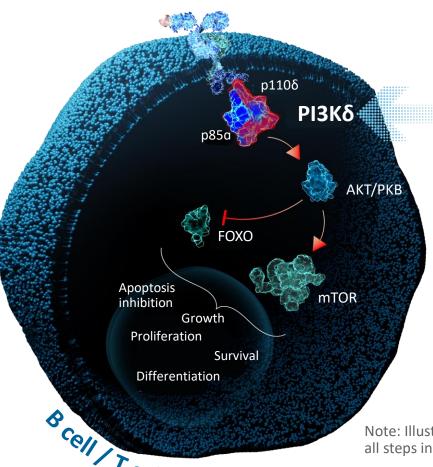
# Genetic defect leads to PI3Kδ hyperactivity, disrupting immune cell balance



## Hyperactive PI3Kδ results in dysregulated B and T cell development<sup>1-3</sup>



## Immune imbalance leads to diverse signs and symptoms<sup>1,4-6</sup>



The PI3Kδ enzyme is at the beginning of a complex signaling pathway



### Severe, recurrent, persistent infections

- Sinopulmonary
- Herpesvirus (especially EBV and CMV)



### Lymphoproliferation

- Lymphadenopathy
- Splenomegaly/hepatomegaly
- Nodular lymphoid hyperplasia



### **Enteropathy**



- Cytopenias
- Autoimmune disorders
- Autoinflammatory disorders



#### **Bronchiectasis**

Lymphoma

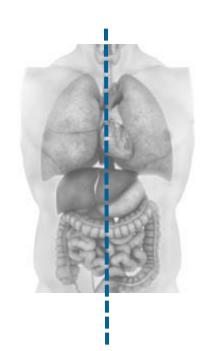
Note: Illustration does not include all steps in the signaling pathway.

# **Current Management for APDS**<sup>1,2</sup>



## **Immune Deficiency**

- Antimicrobial prophylaxis
- Immunoglobulin replacement therapy



## **Immune Dysregulation**

- Corticosteroids
- Other immunosuppressants
- mTOR inhibitors

None of these therapies are FDAapproved for APDS treatment

Hematopoietic stem cell transplant

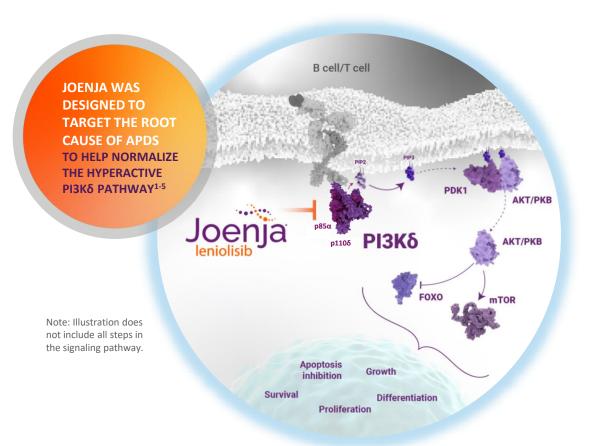
APDS, activated phosphatidylinositol 3-kinase δ syndrome; IRT, immunoglobulin replacement therapy; mTOR, mammalian target of rapamycin; PI, primary immunodeficiency; PIRD, primary immune regulatory disorder.

<sup>1.</sup> Coulter TI, et al. J Allergy Clin Immunol. 2017;139(2):597-606. 2. Elkaim E, et al. J Allergy Clin Immunol. 2016;138(1):210-218. 3. Chan AY, et al. Front Immunol. 2020;11:239.

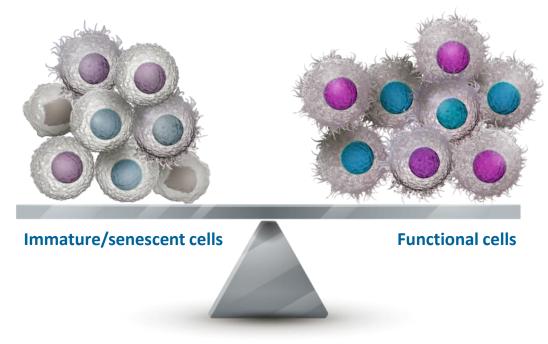
<sup>4.</sup> Chinn IK, et al. J Allergy Clin Immunol. 2020;145(1):46-69.

# Joenja®: immune modulator that targets the root cause of APDS Pharming®





## Joenja® facilitates a balanced PI3Kδ pathway to support proper immune function<sup>6</sup>



This is a graphical representation of a complex biological process.



# Joenja® (leniolisib) US label/packaging





Overview of Prescribing Information		
Indication Statement	JOENJA is a kinase inhibitor indicated for the treatment of activated phosphoinositide 3-kinase delta (PI3K $\delta$ ) syndrome (APDS) in adult and pediatric patients 12 years of age and older.	
Contraindications	None	
Boxed Warning	None	
Risk Evaluation and Mitigation Strategy	None	
Dosing and Administration	Verify pregnancy status in females of reproductive potential prior to initiating treatment.  Recommended dosage: 70 mg administered orally twice daily approximately 12 hours apart, with or without food, in adult and pediatric patients 12 years of age and older and weighing ≥45 kg	
Warnings and Precautions	Embryo-Fetal Toxicity: JOENJA may cause fetal harm. Advise patients of the potential risk to a fetus and to use effective contraception.  Vaccinations: Live, attenuated vaccinations may be less effective if administered during JOENJA treatment.	
Adverse Reactions	Most common adverse reactions (incidence >10%) were headache, sinusitis, and atopic dermatitis.	

# Joenja® clinical trial designs



Pivotal Trial Part 1:
Dosefinding<sup>1,2</sup>



Nonrandomized, open-label, dose-escalating



6 patients with APDS



12 weeks



10 mg, 30 mg, 70 mg bid (4 weeks each dose)



70 mg bid selected for Part 2

Pivotal Trial Part 2:
Efficacy
& Safety
Evaluation<sup>3</sup>



Randomized, triple-blinded, placebo-controlled



31 patients with APDS (21 Joenja®, 10 placebo)



12 weeks



70 mg bid



Co-primary efficacy end points

- Change from baseline in log<sup>10</sup>-transformed SPD of index lesions
  - Also assessed as % change
- Change from baseline in percentage of naïve B cells out of total B cells

Secondary and exploratory end points Safety

Open-label extension study<sup>4,5</sup>



Nonrandomized, open-label, long-term study



- 35 patients with APDS from Parts 1 and 2
- 2 patients with APDS previously treated with investigational PI3Kδ inhibitors



Ongoing



70 mg bid



Long-term safety, tolerability, efficacy, and pharmacokinetics

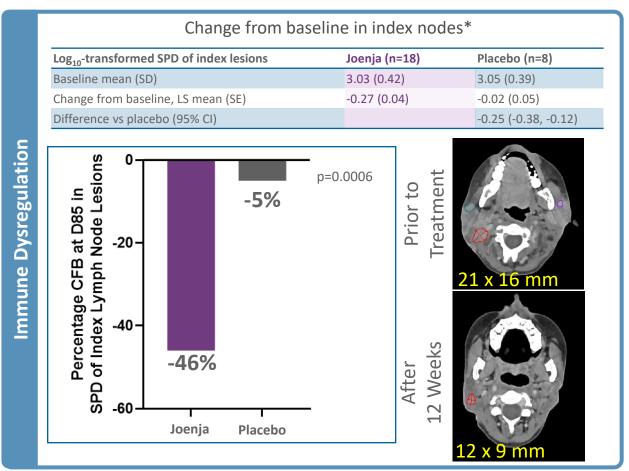


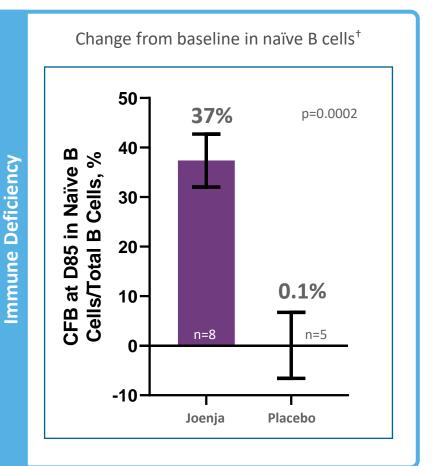
<sup>1.</sup> Rao VK, et al. *Blood*. 2017;130(21):2307-2316. 2. NCT02435173. ClinicalTrials.gov. https://clinicaltrials.gov/ct2/show/NCT02435173. Updated May 6, 2015. Accessed March 13, 2023. 3. Rao VK, et al. *Blood*. 2023;141(9):971-983. 4. NCT02859727. ClinicalTrials.gov. https://clinicaltrials.gov/ct2/show/NCT02859727. Updated October 31, 2022. Accessed March 3, 2023. 5. Data on file. Pharming Healthcare Inc; 2022.

# Joenja® addresses the underlying cause of APDS to help restore immune balance – Phase 3 co-primary endpoints



### At 12 weeks Joenja® decreased lymphadenopathy and increased naïve B cells



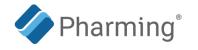


Data were analyzed using an ANCOVA model with treatment as a fixed effect and baseline as a covariate. Use of glucocorticoids and IRT at baseline were both included as categorical (Yes/No) covariates. Baseline is defined as the arithmetic mean of the baseline and D1 values when both are available, and if either baseline or the D1 value is missing, the existing value is used. P-value is 2-sided. Least square means are graphed. Error bars are standard error of the mean.

\*The analysis excluded 2 patients from each treatment group due to protocol deviations and 1 Joenja patient having complete resolution of the index lesion identified at baseline.

<sup>†</sup>Out of 27 patients in the PD analysis set, 13 patients met the analysis requirements, including having a percentage of <48% of naïve B cells at baseline, to form the B-PD analysis set. Joenia [package insert]. Leiden, The Netherlands: Pharming Technologies B.V.; 2023.

# Joenja® safety profile



### Phase 3 Trial<sup>1,2</sup>

Adverse reactions reported by ≥2 patients treated with Joenja and more frequently than placebo

	Joenja (n=21) n (%)	Placebo (n=10) n (%)
Headache	5 (24)	2 (20)
Sinusitis	4 (19)	0
Dermatitis atopic*	3 (14)	0
Tachycardia <sup>†</sup>	2 (10)	0
Diarrhea	2 (10)	0
Fatigue	2 (10)	1 (10)
Pyrexia	2 (10)	0
Back pain	2 (10)	0
Neck pain	2 (10)	0
Alopecia	2 (10)	0

- Study drug-related AEs occurred in 8 patients; the incidence was lower in the Joenja arm (23.8%) than in the placebo arm (30.0%)
- No AEs led to discontinuation of study treatment

### **Open-label Extension Study**<sup>3</sup>

Data cutoff for interim analysis: December 13, 2021

- 32/37 patients reported ≥1 AE
- 78.4% of AEs were grade 1, 48.6% grade 2, 27.0% grade 3, 0% grade 4
- No SAEs related to Joenja

Most common AEs	n
Upper respiratory tract infection	8
Headache	6
Pyrexia	6
Otitis externa	5
Weight increase	5
COVID-19, positive/negative	5/14

One patient with significant baseline cardiovascular comorbidities suffered cardiac arrest resulting in death at extension Day 879; determined by investigator not to be related to study drug

Across all

• 38 patients had a median exposure of ~2 years

trials<sup>2</sup>

4 patients had >5 years of exposure

A patient with multiple occurrences of an AE is counted only once in the AE category. Only AEs occurring at or after first drug intake are included. \*Includes dermatitis atopic and eczema. \*Includes tachycardia and sinus tachycardia.

AEs, adverse events; ALT, alanine aminotransferase; AST, aspartate aminotransferase; SAE, serious adverse event.

<sup>1.</sup> Rao VK, et al. Blood. 2023;141(9):971-983. 2. Joenja [package insert]. Leiden, The Netherlands: Pharming Technologies B.V.; 2023. 3. Data on file. Pharming Healthcare Inc; 2022. Please see Important Safety Information and full Prescribing Information available at joenja.com

# Joenja® significantly reduced splenomegaly



# Secondary endpoint: Significant reductions in spleen size by 2D and 3D analysis compared to placebo

- The adjusted mean difference in bidimensional spleen size between Joenja® (n=19) and placebo (n=9) was -13.5 cm² (95% CI: -24.1, -2.91), P=0.0148
- The adjusted mean difference in 3D spleen volume between Joenja® (n=19) and placebo (n=9) was -186 cm³ (95% CI: -297, -76.2),
   P=0.0020

at week 12
27%
reduction in 3D spleen volume\*

Secondary measure: spleen volume scan results of actual patient illustrate average improvement documented for patients taking Joenja®

## Prior to treatment: 491 mL



At week 12: 314 mL



Actual patient images of a 17-year-old male. As individual results vary, images may not be representative of all patients.

Rao VK. et al. Blood. 2023:141(9):971-983.

PD, pharmacodynamics.

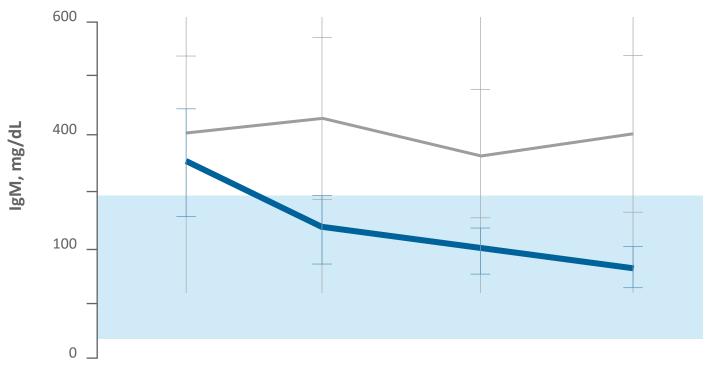
<sup>\*</sup>In the PD analysis set, the mean (SD) percentage change from baseline to week 12 in 3D spleen volume (mm³) was -26.68% (12.137) with Joenja® (n=19) and -1.37% (24.238) with placebo (n=9). The ANCOVA model was used with treatment as a fixed effect and log<sub>10</sub>-transformed baseline as a covariate for index and non-index lesions. The use of both glucocorticoids and IV Ig at baseline was included as categorical (yes/no) covariates.

This analysis excluded 2 patients in each treatment group. In the Joenja® group, 1 patient with a complete index lesion response was excluded, and 3 patients were excluded for no non-index lesion at baseline.

# An exploratory end point showed Joenja® reduced IgM levels



### Mean serum IgM rapidly reduced to within normal limits



Normal range

•	In the Joenja® arm, IgM was
	elevated above normal limits
	in 6 patients at baseline, and
	by week 12 was reduced in
	all, with 50% returning to
	within normal limits

 In contrast, IgM was elevated above normal limits at baseline in 4 patients in the placebo arm, and by week 12 levels remained stable or elevated, with 0% returning to within normal limits

Error bars are standard error of the mean. Safety analysis set (N=31) shown. Blue box indicates IgM normal range.

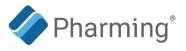
Soluble biomarkers, including IgM, were prespecified exploratory endpoints in the protocol. Although an observational decrease in IgM was noted in some patients, no statistical significance can be made from this analysis, and no conclusions should be drawn.

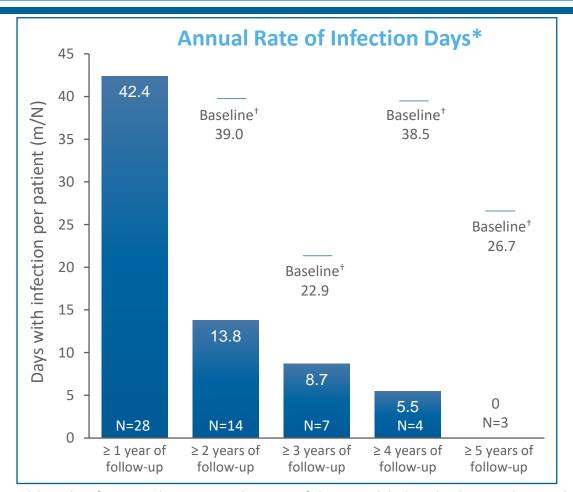
Baseline
 Week 4
 Week 8
 Week 12

 Joenja® n
 21
 20
 21
 21

 Placebo n
 10
 10
 10
 10

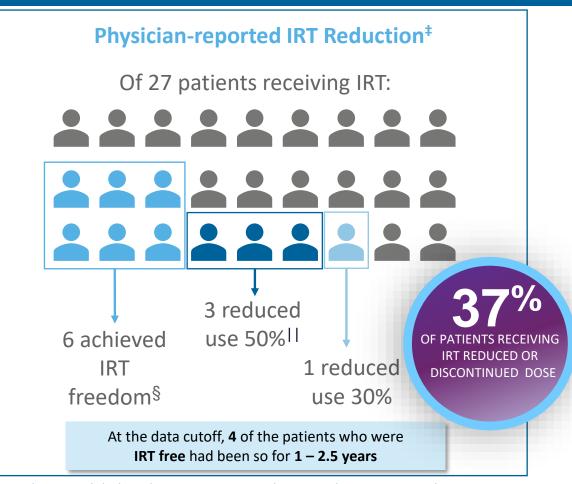
# Open-label extension interim analysis of days spent with infections and IRT reduction





Rao VK, et al. Poster presented at: 64th Annual American Society of Hematology Annual Meeting; December 10-13, 2022; New Orleans, LA.

Please see Important Safety Information and full Prescribing Information available at joenja.com



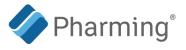
Although safety was the primary objective of the open-label study, this post hoc analysis from the open-label study was not powered to provide any statistical significance of efficacy and therefore no conclusions should be drawn.

\*Infections that developed during the study were reported as adverse events. Investigators were requested to inquire about signs and symptoms of infections at each visit, with a particular focus on bacterial enterocolitis. Patients were not provided an infection diary to document infections occurring between visits. One patient was excluded from the analysis due to an incorrect year that was recorded for an infection.

†Baseline infections are each group's year 1 annual rate of infections. N values changed because patients were in the OLE for different lengths of time. ‡Data on concomitant medication usage was reported at each patient visit. §One patient had a subsequent one-time dose. <sup>11</sup>One patient achieved IRT freedom for 3 months but subsequently restarted IRT.

IRT, immunoglobulin replacement therapy; m, number of infection days; N, number of patients in follow-up category.

# FDA approval of Joenja®: another win for Pharming and a much-needed treatment for patients with APDS



Joenja® (leniolisib) is a prescription medicine that is used to treat activated phosphoinositide 3-kinase delta (PI3K $\delta$ ) syndrome (APDS) in adults and pediatric patients 12 years of age and older

Joenja® reported additional findings from an ongoing long-term openlabel extension study interim analysis: reductions/discontinuations in IRT and reduction in infection rates

In a randomized placebocontrolled trial of patients with APDS

- Joenja® met both primary end points with significant efficacy results
- Demonstrated significant improvement in other secondary and exploratory parameters



Extension study interim analysis demonstrated safety consistent with the randomized, controlled trial. We continue to collect observational long-term data on lymphadenopathy, naive B cells and IgM

There were no drug-related serious adverse events or study withdrawals in Joenja® trials

Pharming is well-positioned to hit the ground running with Joenja®



# Joenja® strategic imperatives for success





SI 1: Identify

**Continue to identify HCPs and** patients to expand networks with the support of patient advocacy partners



SI 2: Educate

Build knowledge of APDS and belief in PI3Kδ inhibitor benefits by defining the disease, journey, and unmet needs



SI 3: Differentiate Joenja®

Differentiate Joenja® as a well-tolerated and efficacious **treatment for APDS** that targets the root cause of the disease



SI 4: Establish Access

Establish access that enables genetic testing and optimizes the Joenja® benefits and value proposition



## ~1500 APDS patients\*

(as of December 2022 for Australia, Canada, Europe, Japan, US, UK)

>500 patients identified by Pharming to date











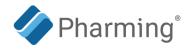


Clinical Immunology





# Joenja® set up for commercial success





### **Commercial Field Team**

Rare Disease Team of 27 focused on Allergy/Immunology

Institutional Team of 27 focused on multiple specialties.



### **Patient Identification**

- Work with HCPs to further identify patients and get them tested
- APDS clinical educators assist with family mapping







## **Support Services**

- Dedicated support, education and resources for patients and caregivers through the APDS Assist patient support program
- APDS Care Coordinators provide support for onboarding, coverage assistance and financial support resources



### **Patient Access**

- Partnered exclusively with PANTHERx Specialty
   Pharmacy
- Starter and Bridge program enables rapid access while navigating coverage
- Copay Assistance and Patient Assistance Programs for eligible patients ensure affordability to care

# **Facilitating access through APDS Assist**



## **Program Offerings**





#### **Cost & insurance**

Providing insurance coverage assistance and financial support resources



### **Filling prescriptions**

Coordinates prescription details with patient families/caregivers and HCP through single point of contact to assist in getting Joenja® dispensed on time



### **Support & education**

Regularly touches base to help patient families/caregivers with their insurance, provides appropriate financial assistance options for eligible patients, and assists with prescription delivery

## **Dedicated, Experienced Support Team**



#### **APDS Assist Care Coordinators**

Welcomes patient families/caregivers to APDS Assist and helps navigate coverage, access, and support options



#### **APDS Clinical Educators (ACE)**

Provides one-on-one education, support and resources for patients, caregivers and family members

## **Exclusive Specialty Pharmacy Model**



Partnered exclusively with PANTHERx, specializing in rare and ultra-rare therapeutic areas

Process and fill Joenja® prescriptions with clinical pharmacists, available 24/7, to:

- Answer questions and offer treatment support for Joenja®
- Provide information about potential side effects and offer information support when appropriate

APDS Assist offers personalized coverage assistance, financial resources and prescription support to patients and caregivers starting and continuing Joenja® therapy

## **Commitment to rapid access for eligible patients**





## **Starter Program**

- Available to all newly enrolled patients
- Up to 30-day supply within one week of enrollment for most patients



## **Bridge Program**

- Available for patients in which insurance has been verified
- Provides continuation of therapy when there is a gap in coverage while seeking payer approval



## **Copay Assistance**

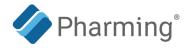
- Eligible patients with commercial insurance may pay as little as \$0 per month
- Assists with deductible, copay/co-insurance and out of pockets costs for Joenja®



## Patient Assistance Program

 Continuation of coverage may be provided for uninsured patients or situations in which Joenja® is not covered by their insurance plan

# Joenja® value proposition





Precision medicine targeting rare and genetically-defined patient population



First and only treatment indicated for APDS addressing high unmet need



Demonstrated efficacy and safety profile



Significant burden of disease

### Innovation:

 Pharming is committed to providing patients with rare disease the solutions they need

#### Value:

- APDS is a progressive disease
- Joenja® designed to treat the root cause of APDS treating both immune deficiency and dysregulation

#### Patient Access:

- Dedicated support and education resources through the APDS Assist patient support program
- APDS Assist to help patients navigate coverage to ensure all eligible patients receive access to treatment

### Support:

 Pharming is committed to the APDS community through active grassroots engagement with advocacy groups such as the IDF and Jeffrey Modell Foundation

# **Beginning treatment with JOENJA®**



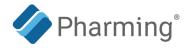


## **Commercial Product Available mid-April 2023**

APDS Assist patient support services now active		
APDS W Assist	www.joenja-hcp.com/APDSAssist 1-877-796-2737 (APDS)	
Joenja <sup>®</sup> NDC	71274-170-60	
Supplied as	60-count bottle (30-day supply)	
Wholesale acquisition cost (WAC)		
Per tablet	\$750.00	
Per mg	\$10.71	
Per bottle	\$45,000.00	



## **Financial considerations**



- Pharming licensed global rights to leniolisib from Novartis in 2019
- Near-term milestone payments to Novartis and another party
  - \$10.5M total for the approval and first commercial sale for APDS
- Future potential milestone payments
  - Sales milestones of up to \$190 million
- Tiered royalties on net sales ranging from the low to high teens percentages
- Priority review voucher received by Pharming from FDA
  - Novartis has the right to purchase the voucher for a small minority share of the value of the voucher



# **Building a sustainable rare disease business**







Global approvals and commercialization of Joenja® (leniolisib)



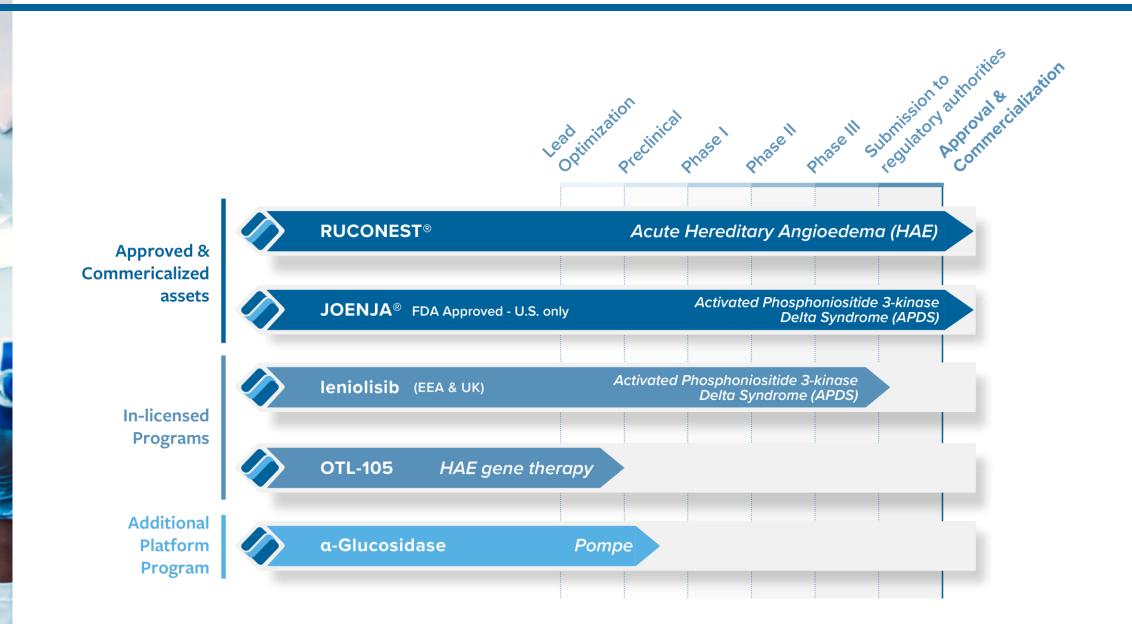
Ongoing pipeline development and management of rare disease assets

Positive cash flow from RUCONEST® helps fund Joenja® (leniolisib) and pipeline development and management Successful
commercialization of
Joenja® (leniolisib) for
APDS and additional rare
disease indications

Advance internal projects and potential acquisitions of new, latestage assets through in-licensing and M&A

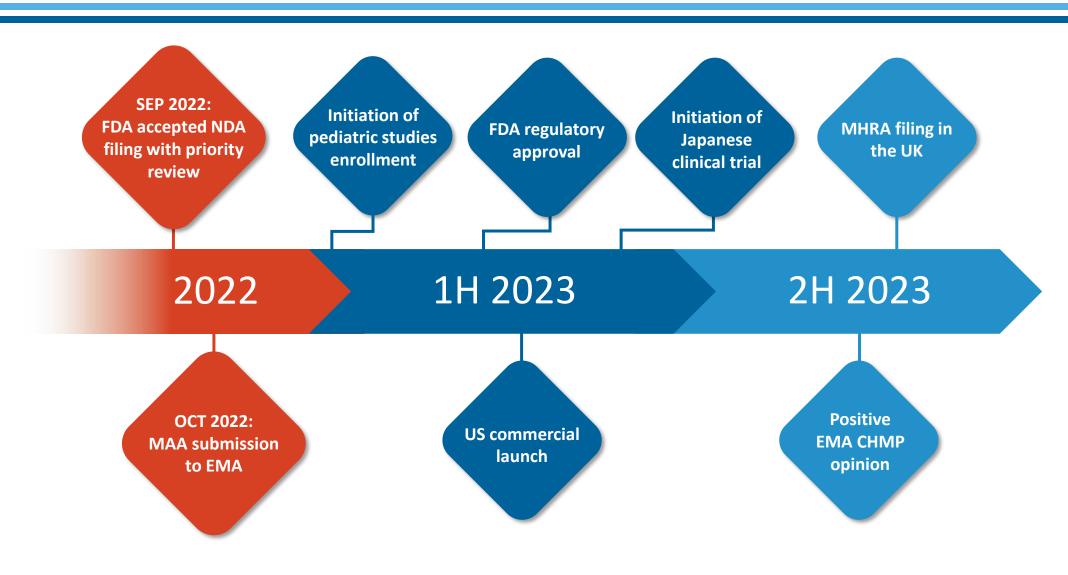
# Pipeline – multiple commercial stage rare disease products





# Anticipated milestones for Joenja® (leniolisib)\*





<sup>\*</sup>These dates are not an assurance of future performance; they are based on current expectations and assumptions regarding the future of our business.

Please refer to our Forward-looking Statement on slide 2 of this presentation.

## Outlook 2023





Continued low single-digit growth in RUCONEST® revenues



Joenja® approved by US FDA March 2023, launch and commercialization April 2023



Positive CHMP opinion in 2H 2023, marketing authorization in Europe ~2 months later\*



File leniolisib with UK's MHRA following ECDRP route\*



Continued operating cost investments to accelerate future growth



Further details on our plans to develop leniolisib in additional indications to be provided in 2H 2023



Investment and continued focus on potential acquisitions and in-licensing of late-stage opportunities in rare diseases

# Thank you



- ♦ We are grateful to the patients and their families who participated in the clinical trials
- Thank you to the investigators, caregivers, and physicians
- Thank you to the patient advocacy organizations
- Thank you to the Pharming and the Novartis teams who have supported the development of Joenja® and can be very proud of this FDA approval





