

**ORUKA**  
THERAPEUTICS

Company Overview  
April 2024

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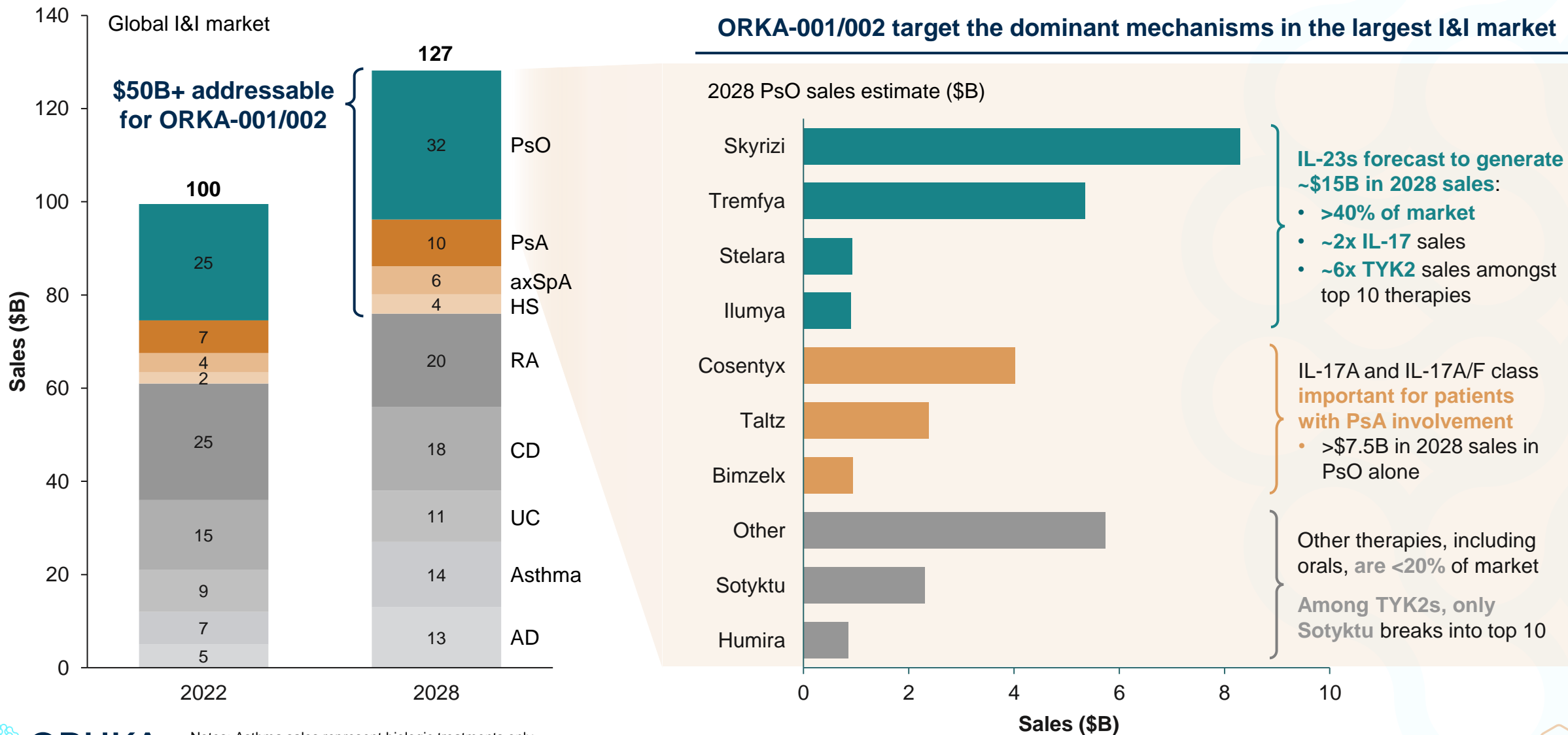
# Building best-in-class therapies for psoriasis and other diseases

Our name – derived from *or*, for “skin,” and *arukah*, for “restoration” – reflects our mission to deliver **best-in-class therapies for inflammatory skin diseases**

- Potentially **best-in-class half-life extended mAbs** designed to **maximize efficacy** with as little as **one dose per year**
- Targeting mechanisms with **proven efficacy and safety** involved in disease pathology and maintenance of tissue-resident memory T cells (TRM) **to treat and potentially cure disease**
- **Acquired rights to development candidates from Paragon Therapeutics**, an antibody discovery company founded by Fairmount, **following in the footsteps of Apogee and Spyre** which collectively raised >\$700M in 2023

TARGET	PROGRAM	DISCOVERY	IND-ENABLING	CLINICAL	POTENTIAL INDICATIONS
IL-23 Same MoA as Skyrizi®	ORKA-001	[Progress bar]		FIH 1H25 HV PK 2H25	PsO
IL-17A/F Same MoA as Bimzelx®	ORKA-002	[Progress bar]		FIH 2H25	PsO, PsA, others
Undisclosed TRM MoA		[Progress bar]			
Combinations		[Progress bar]			

# Co-lead programs target a \$50B+ total market opportunity



**ORKA-001:  
potentially best-in-class anti-IL-23p19**



# Biologics have raised the bar on standard of care in PsO, but there is ample room for improvement



# Perfecting the product profile in plaque psoriasis



**1-2 doses per year**



*Enabled by  
half-life extension*



**Higher PASI 100**



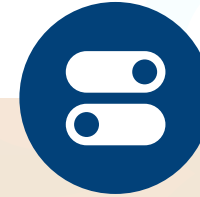
*Higher exposure  
drives higher  
response*



**IL-23p19 safety profile**



*Strong safety  
precedent even at  
high peak exposures*



**Disease modifying**



*Evidence for disease  
modification via high  
exposure anti-IL-23*

# ORKA-001 could be the last word in IL-23p19 inhibitors

## Similar epitope to Skyrizi (risankizumab) with equal or better potency

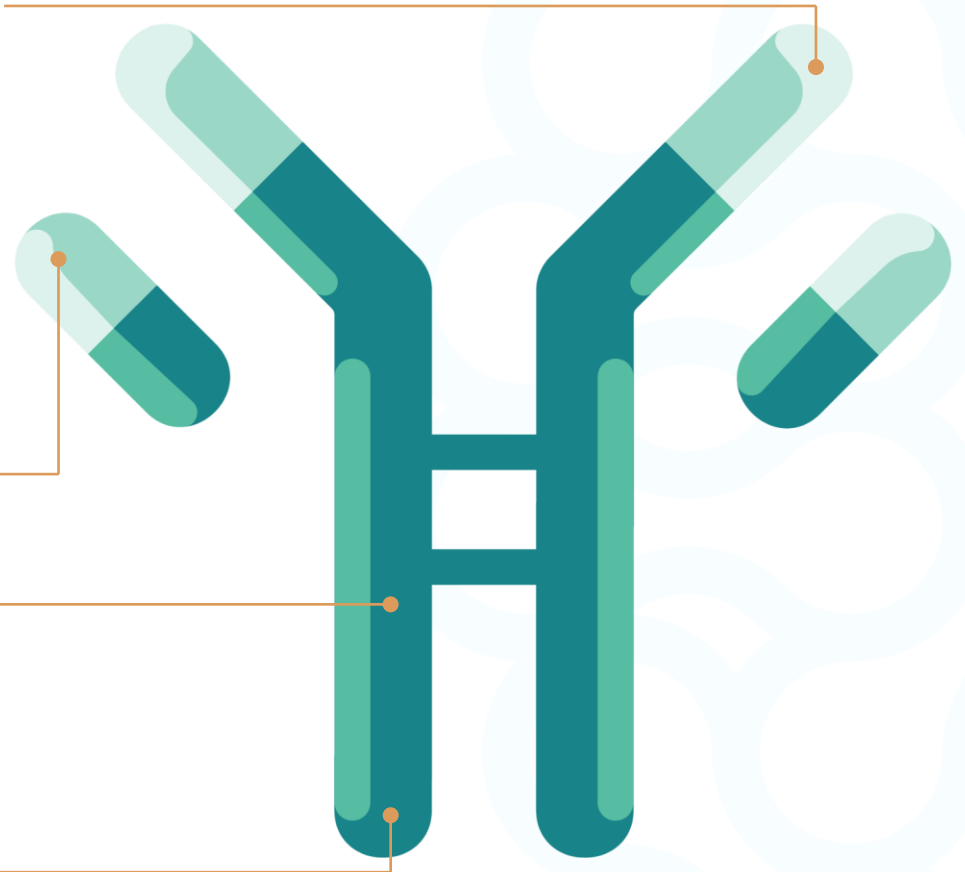
- Validated mechanism of action
- Binds **specifically to IL-23p19** (not IL-12/23 p40)
- $K_D < 20 \text{ pM}$
- Predicted **equivalent safety**
- Predicted to **meet or beat efficacy**

## Novel IP for composition of matter into 2040s

## Half-life extension through validated Fc modification

- **Higher exposure** to increase efficacy
- **Longer exposure** to reduce dosing frequency

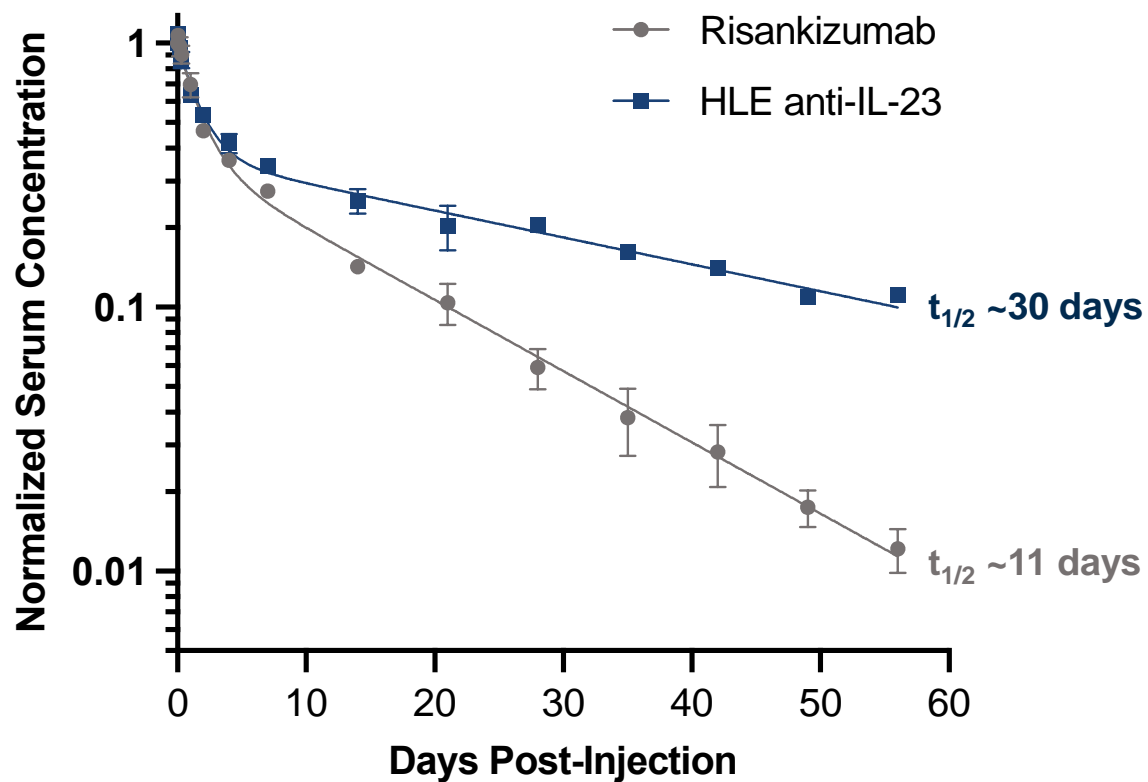
## Effector-null human IgG1 Fc



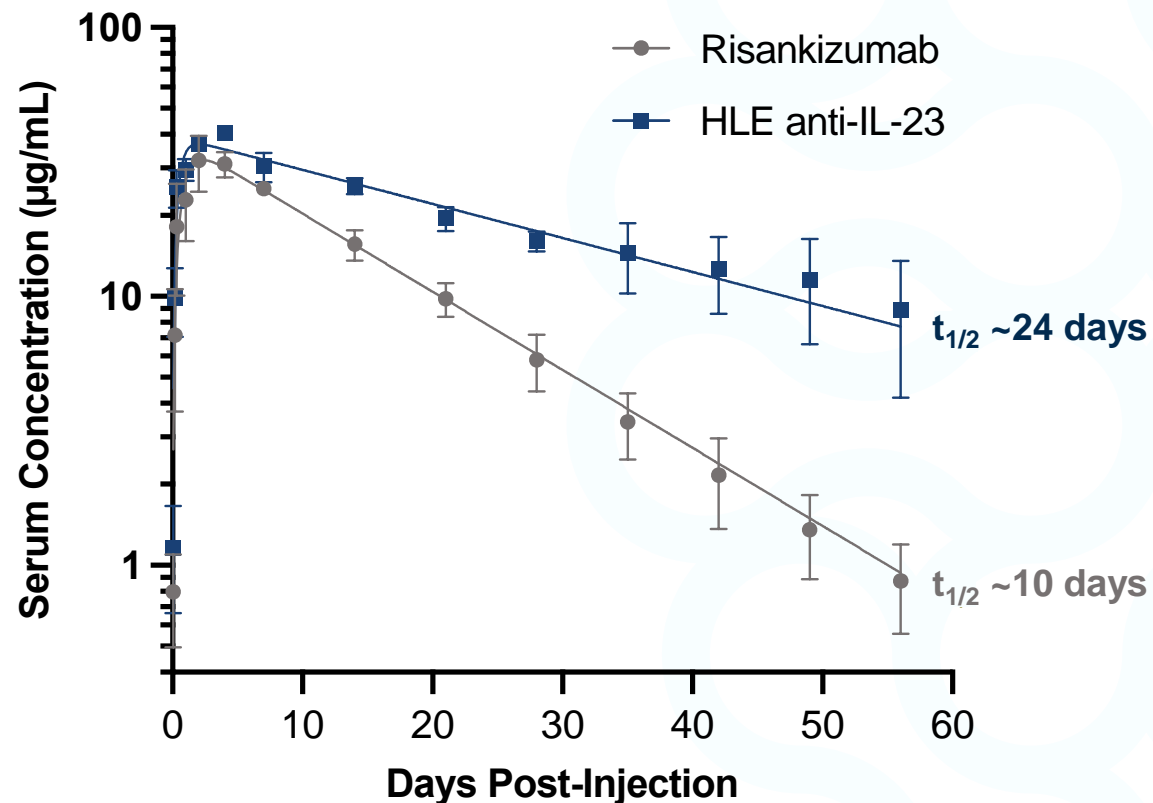


# 2-3x longer half-life vs. Skyrizi achieved in NHPs with PoC mAb

2.7x increased half-life via IV administration vs. Skyrizi

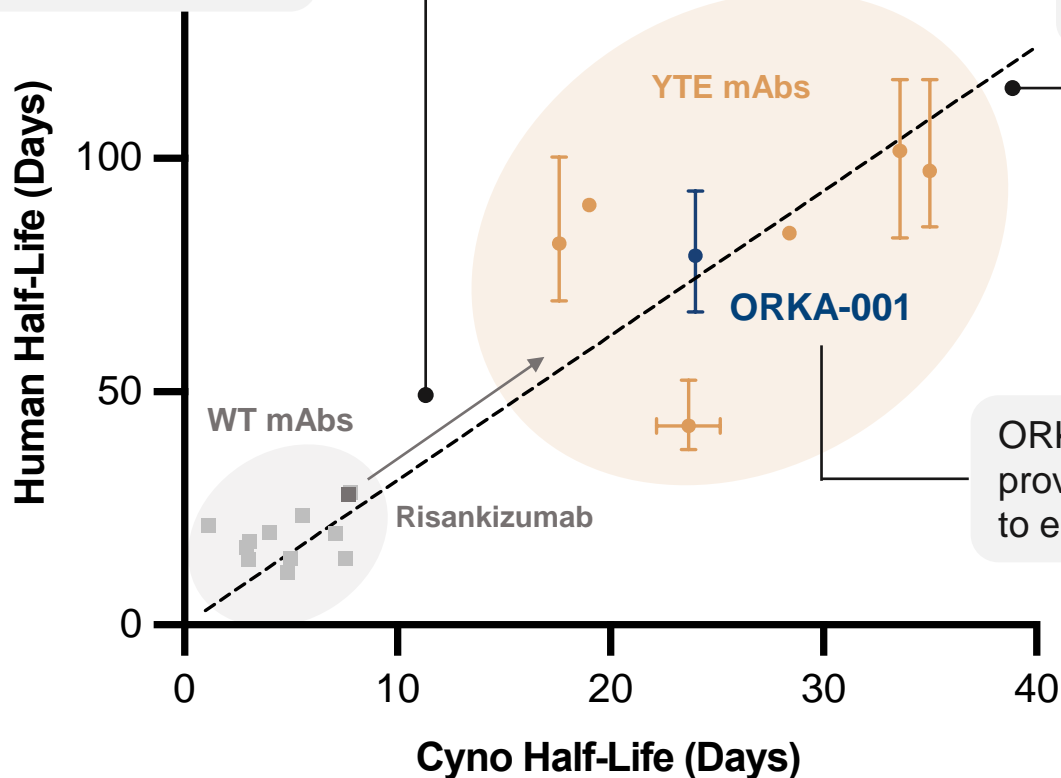


2.4x increased half-life via SC administration vs. Skyrizi



# Clinical experience with YTE predicts significant half-life extension for ORKA-001

YTE modification typically increases mAb  $t_{1/2}$  by 2-4x vs. WT in both NHP and humans

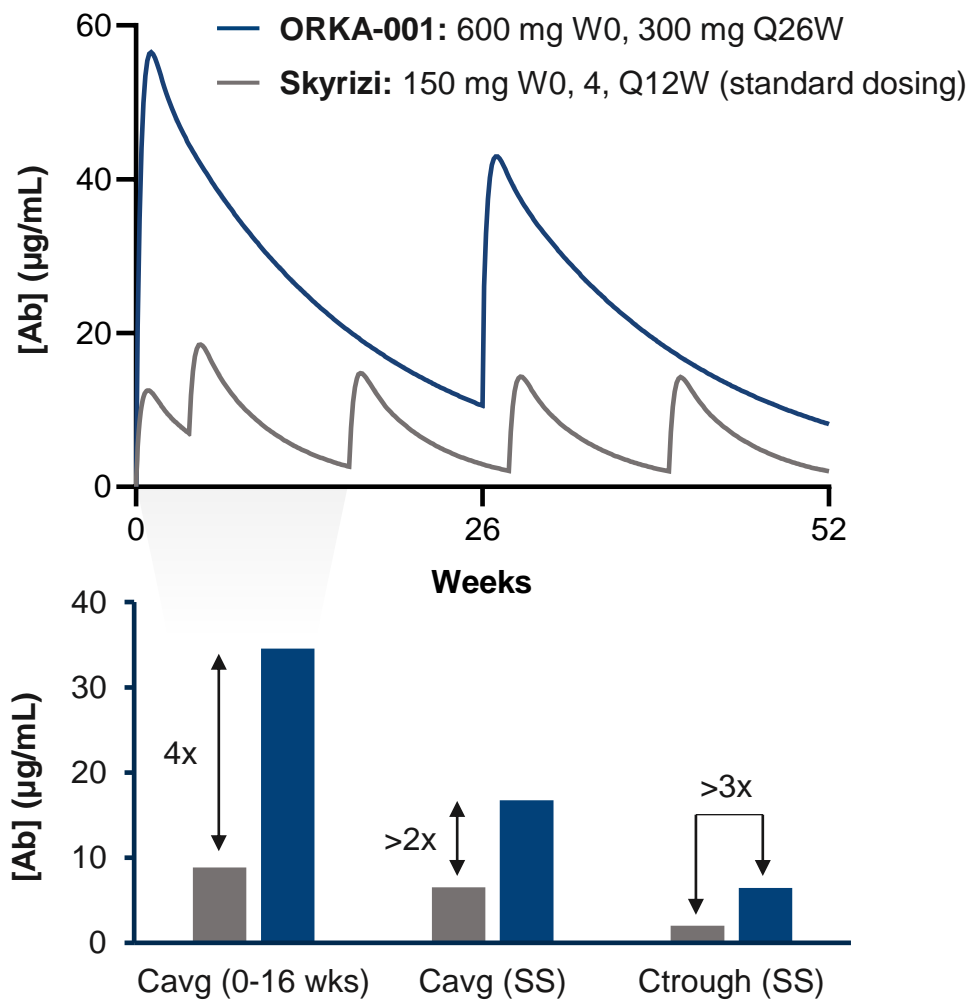


**ORKA-001**  
projected human half-life: ~74 days expected to enable once- or twice-yearly dosing vs. quarterly with Skyrizi

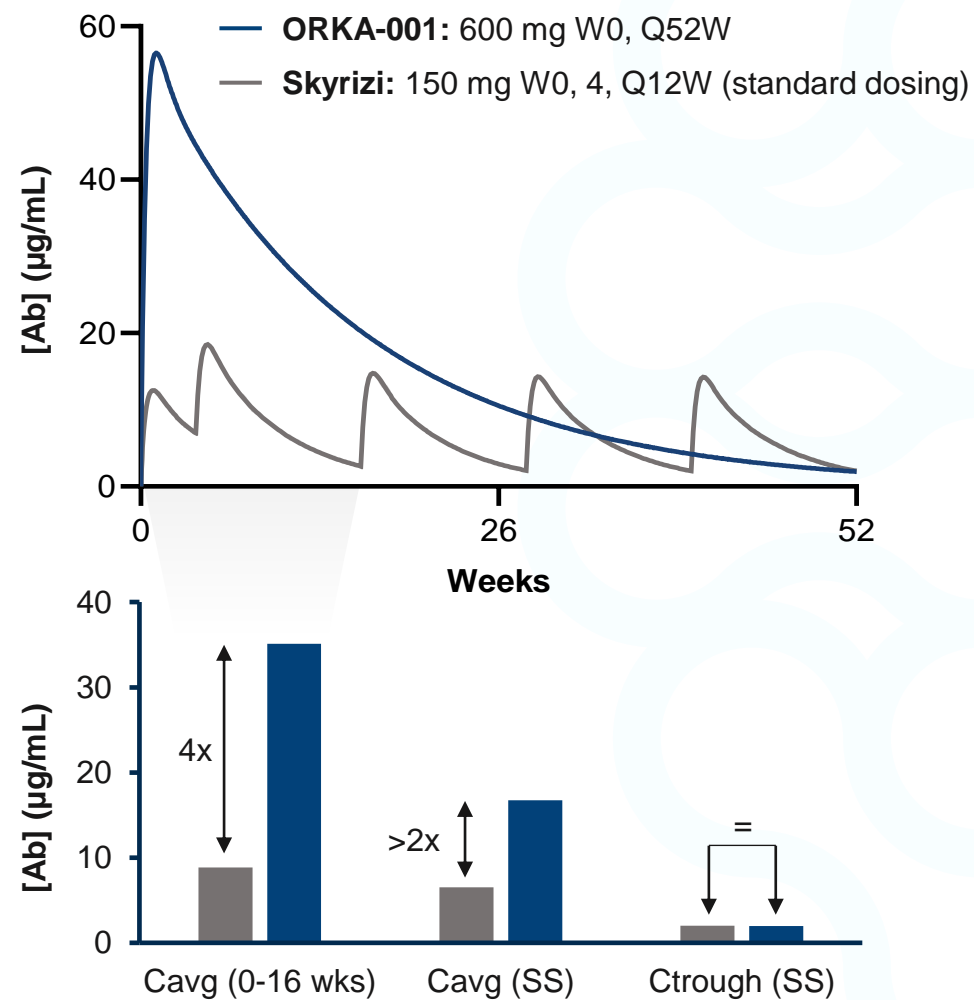
Notes & Sources: Includes mAbs targeting soluble antigens with publicly available data for both NHP and humans from which half-lives could be derived. **WT mAbs:** Table S1 in 2020 Nakamura: raxibacumab, siltuximab, CNTO5825, bevacizumab, belimumab, mepolizumab, motavizumab, palivizumab, Humicade, canakinumab, adalimumab. **YTE mAbs:** Evusheld: 2022 Loo; 2022 Levin. Nirsevimab: Fig. 5 in 2017 Zhu; Table 2 in 2017 Griffin. Depemokimab: Table 19 in US20180340023A1; Table 3 in 2022 Singh. Motavizumab-YTE: Table S1 of 2020 Nakamura. Ziltivekimab: Table 4 in 2011 Finch; 2016 Zhong. STAR-0215: 2021 Bista; Astria Press Release, Dec 15, 2022

# ORKA-001 could exceed Skyrizi exposures at 1-2 doses per year

**Base case – 2 maintenance doses per year**



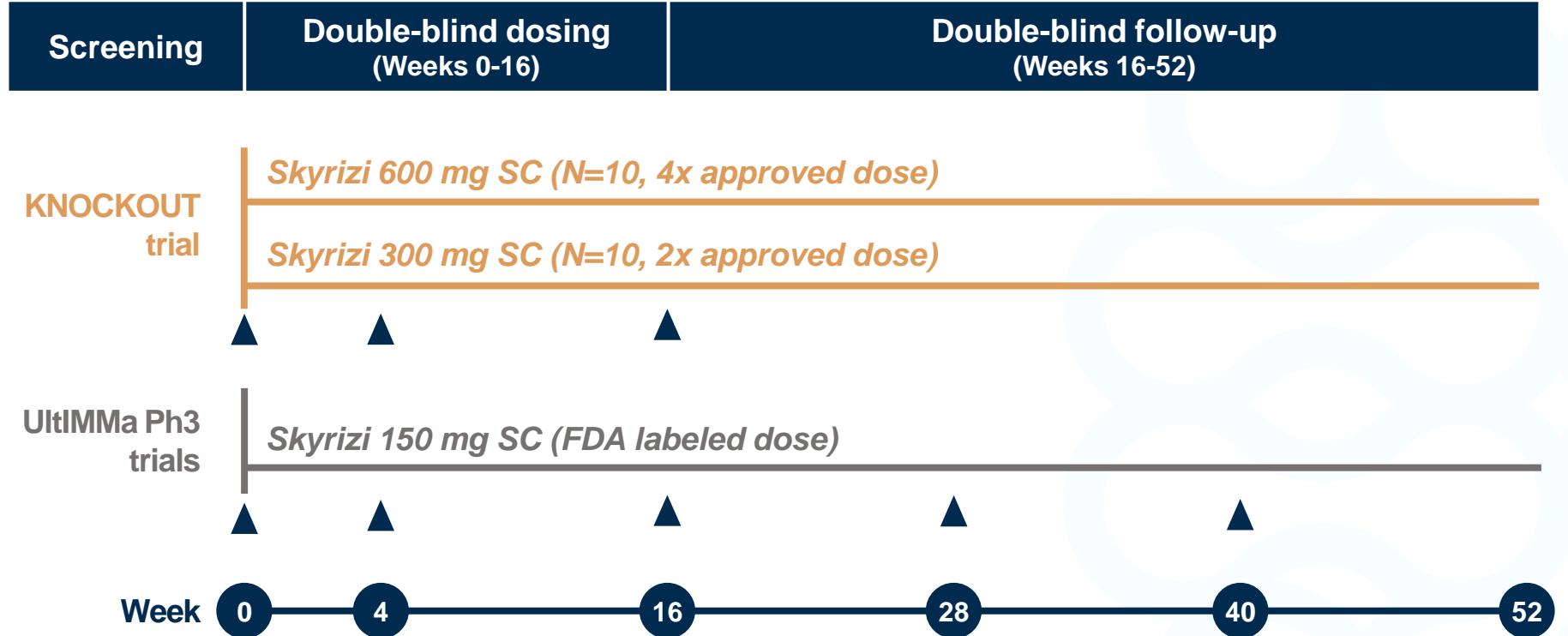
**Upside case – 1 maintenance dose per year**



# KNOCKOUT study tested higher anti-IL-23 exposures in PsO

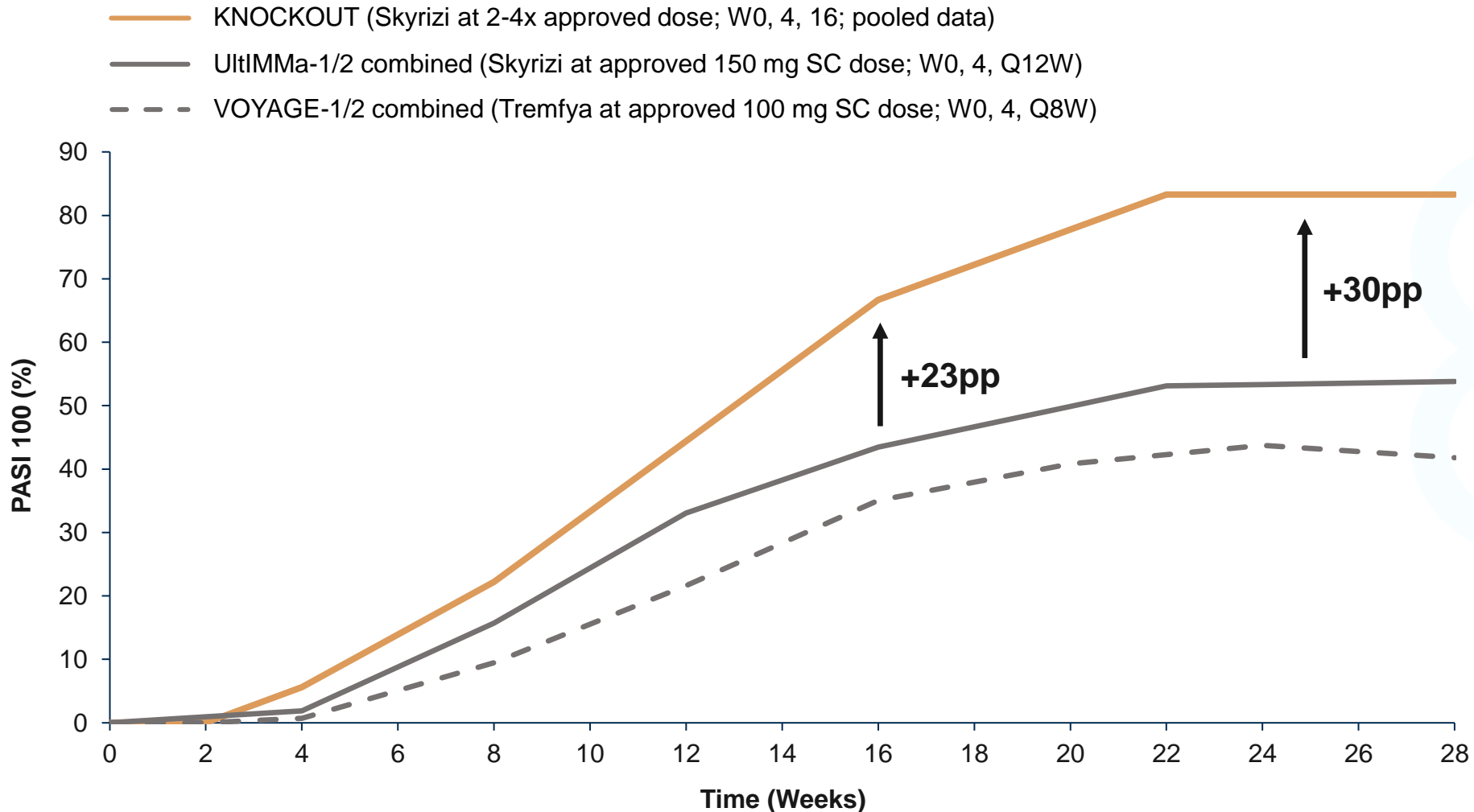
## KNOCKOUT inclusion criteria

- Adults
- Chronic, stable plaque psoriasis
  - $\geq 6$  months
  - PASI  $\geq 12$
  - $\geq 10\%$  BSA
- No prior Skyrizi use



Goal to determine if high-dose IL-23 inhibition at 2-4x the approved Skyrizi dose could result in higher PASI 100 rates and long-term remissions by eliminating TRMs

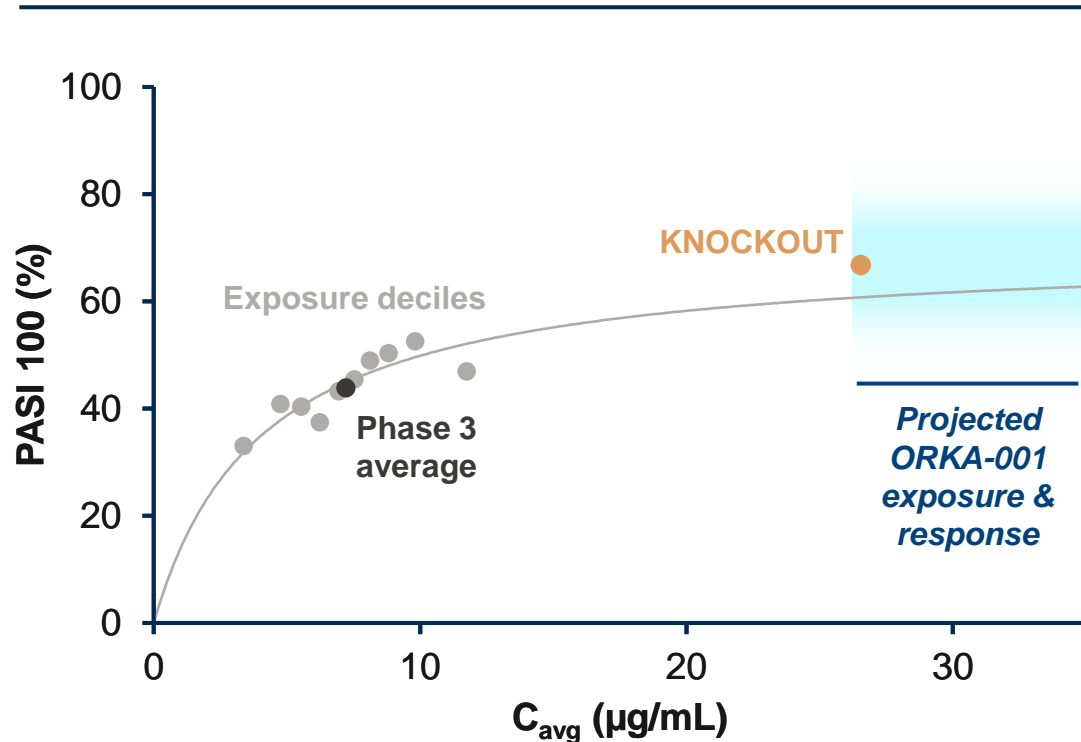
# KNOCKOUT extended exposure-response relationship – higher exposures drove higher PASI 100



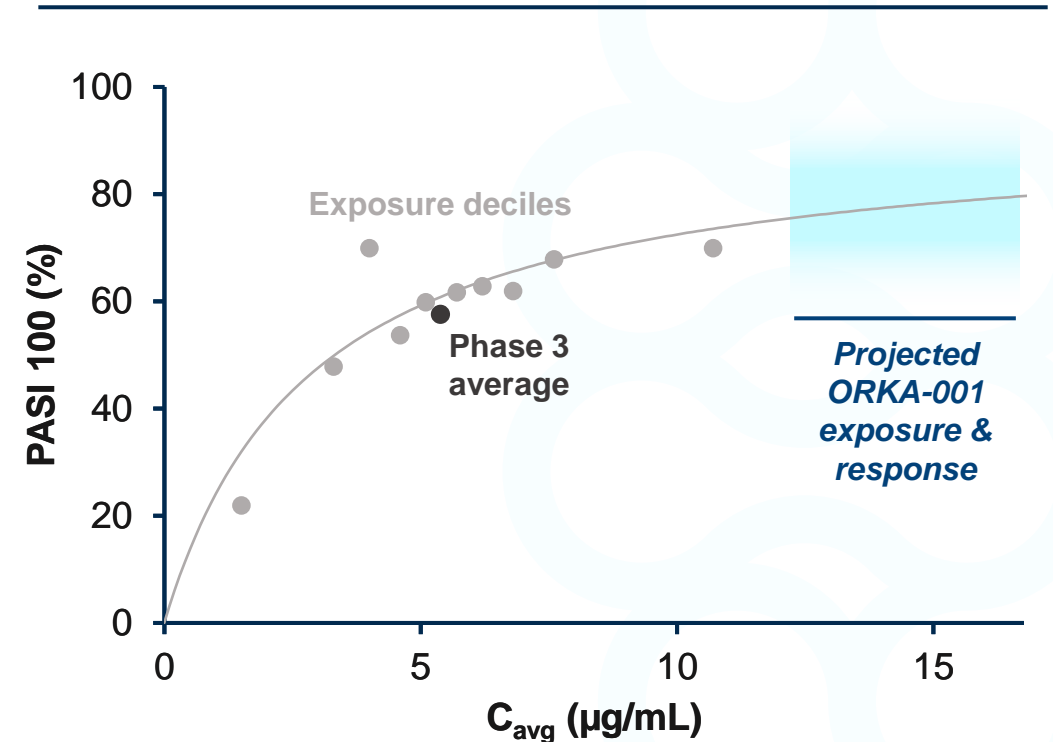
Ongoing follow-up to test whether higher exposures can drive durable remissions by eliminating TRM cells from the tissue

# ORKA-001 projected to extend exposure-response relationship established by Skyrizi Phase III and KNOCKOUT

Induction phase (0-16 weeks)



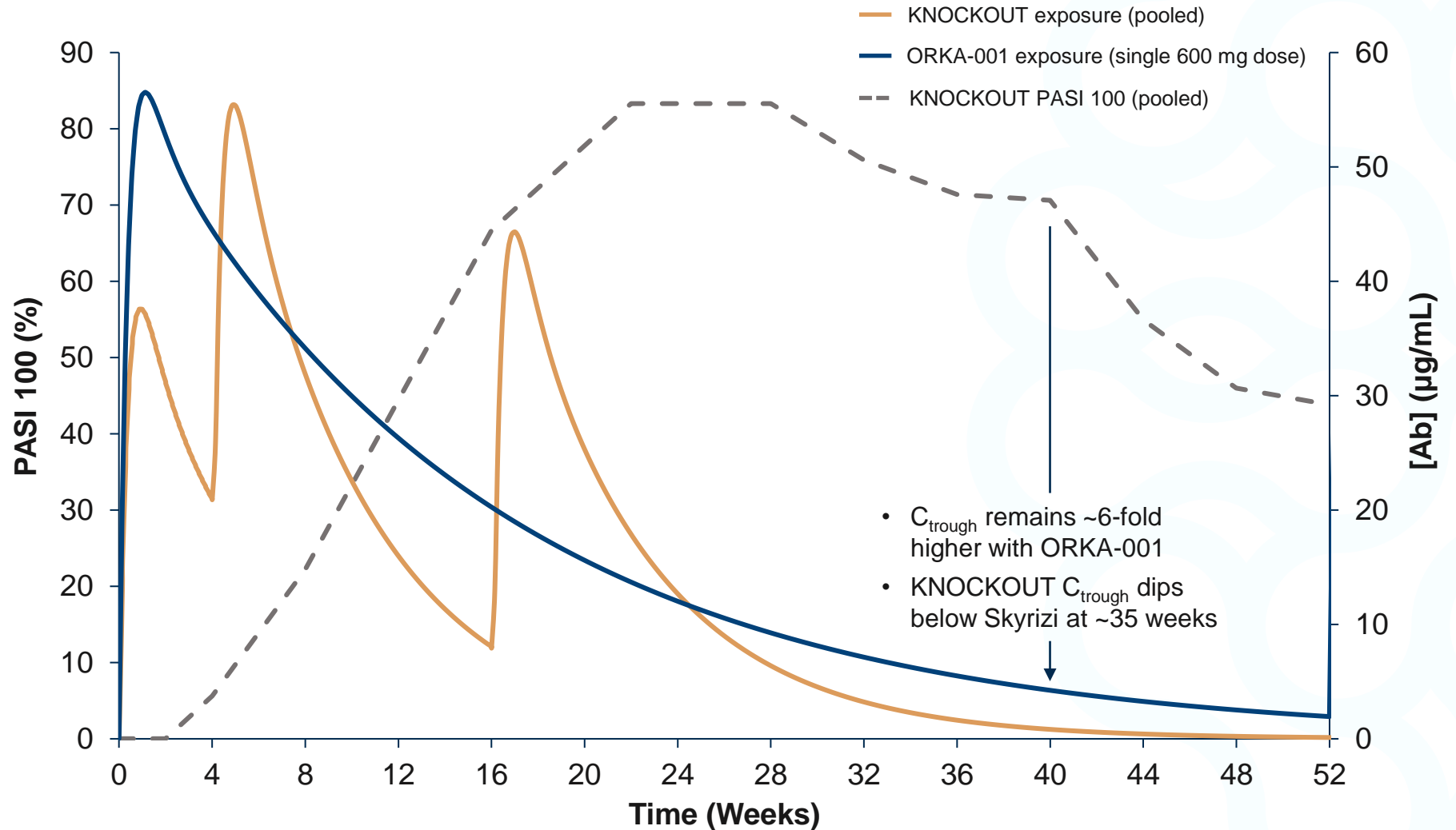
Steady-state phase (40-52 weeks)



Skyrizi exposure-response data indicates that **projected ORKA-001 exposures could result in 10-20% higher PASI 100 rates than Skyrizi**

# ORKA-001 at one dose per year could match KNOCKOUT early exposures and greatly exceed trough levels

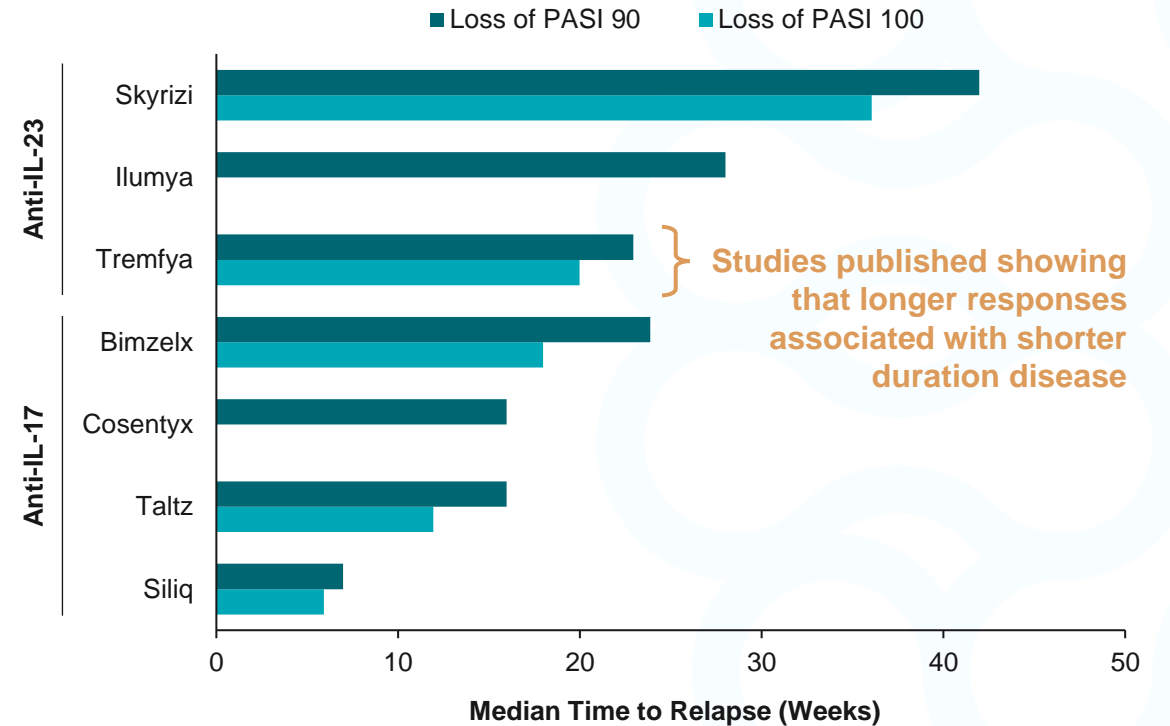
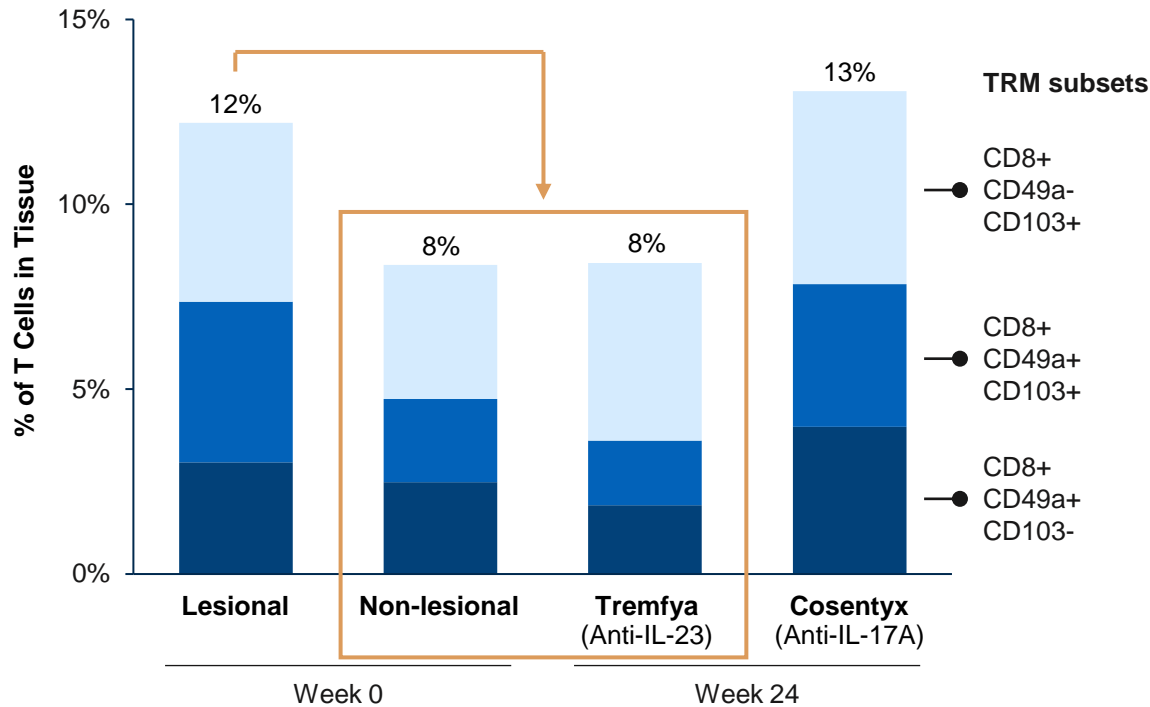
- Patients in KNOCKOUT received **2-4x approved Skyrizi** dose at 0, 4, and 16 weeks
- ORKA-001 could exceed these exposures **at an achievable dose for a Q1Y regimen**
- ORKA-001 could have **superior maintenance of response** late in the dosing interval via higher  $C_{trough}$  levels



# Potential for disease modification or cure by depleting TRMs

Anti-IL-23 acts upstream of disease-causing TRMs, and has a unique ability to deplete them from tissue

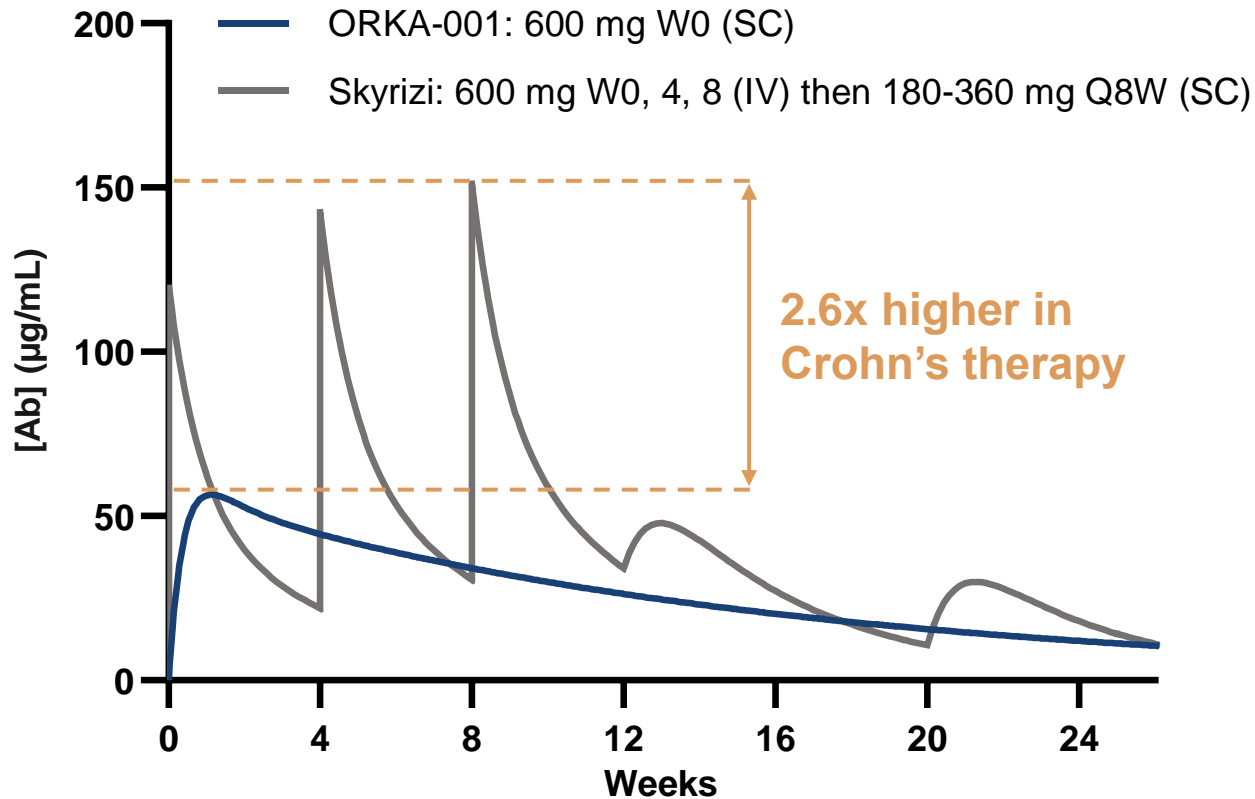
Leading to long-lasting remissions after treatment withdrawal – pointing to possibility of disease modification



Excitement growing in dermatology community to **test disease modification potential of high anti-IL-23 exposures early in disease – a perfect opportunity for ORKA-001**



# Safety of peak exposures established by Crohn's dose regimen



- **Peak exposures** with highest ORKA-001 proposed dosing are **less than ½ what is routinely used in Crohn's**
- **No correlations at patient level between exposure and safety** signals for Skyrizi across 1,000s of patients dosed in derm and IBD
- **Very uncommon to have clinical precedent** in large numbers of patients for safety of higher exposures

*“You literally can't overdose this drug...patients take two shots on accident and they're fine” – U.S. KOL*

# Base case is best-in-class, upside could be paradigm changing

## Base case scenario

Maintenance dosing

Twice yearly

PASI 100

Match or exceed Skyrizi

Added benefit

Potential for **patient-specific dosing to extend interval**

*Best-in-class profile*

## Upside scenario

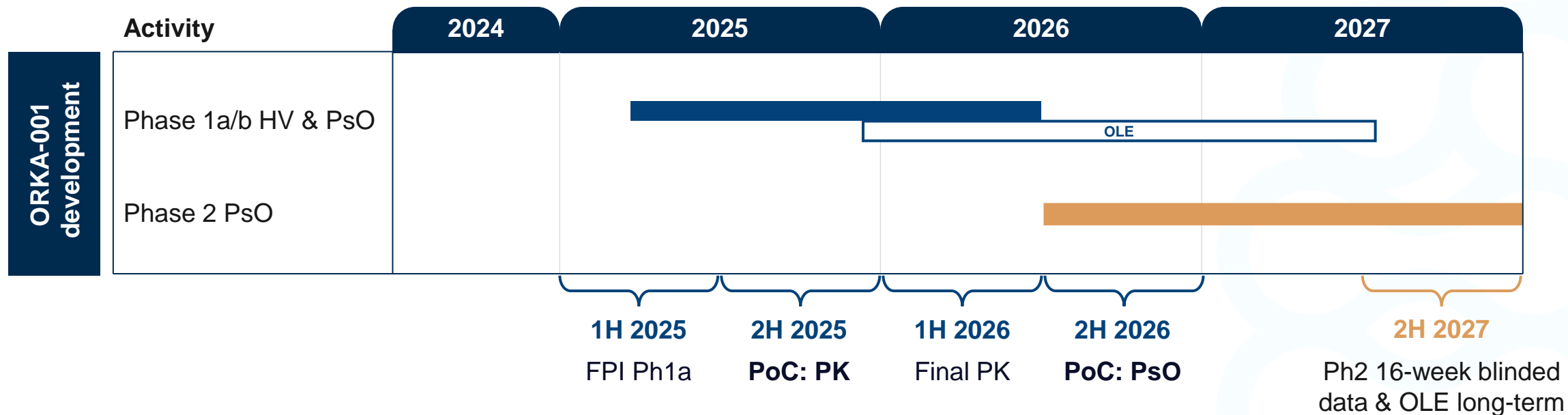
Once yearly

**Highest observed to date**  
(as in KNOCKOUT study)

**Modify and potentially cure disease** in some patients

*Paradigm-changing*

# Development path sets up a catalyst-rich next 3 years



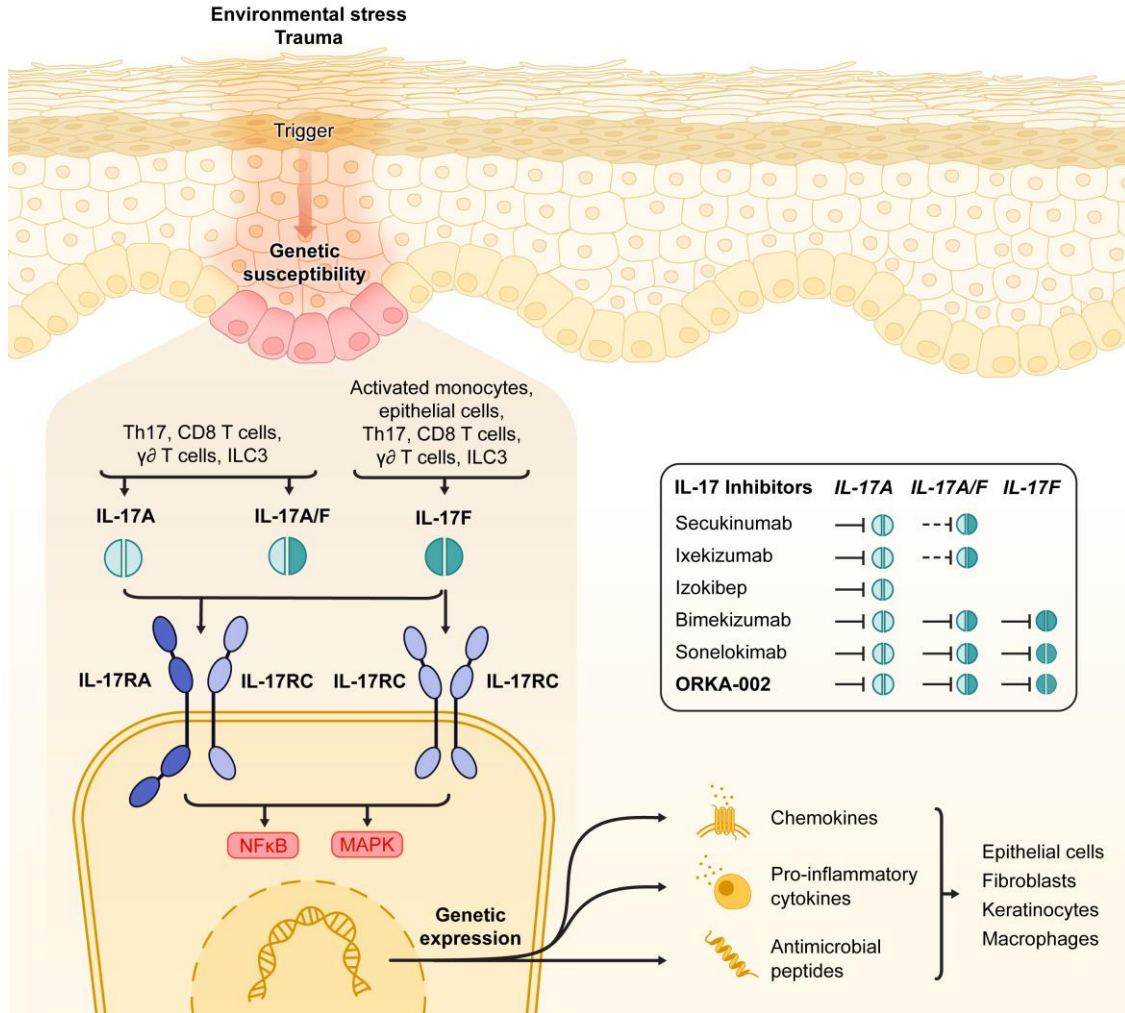
## Potential for rapid de-risking, value recognition, and path to BLA

- **PoC PK data is highly validating**, showing both basis for differentiation and early safety
- Validated clinical endpoints (e.g., PASI 100) show **highly robust correlation between Phase 2 and 3**
- Rapid timelines possible in PsO – **average time from FIH to BLA/NDA is 6.5 years**

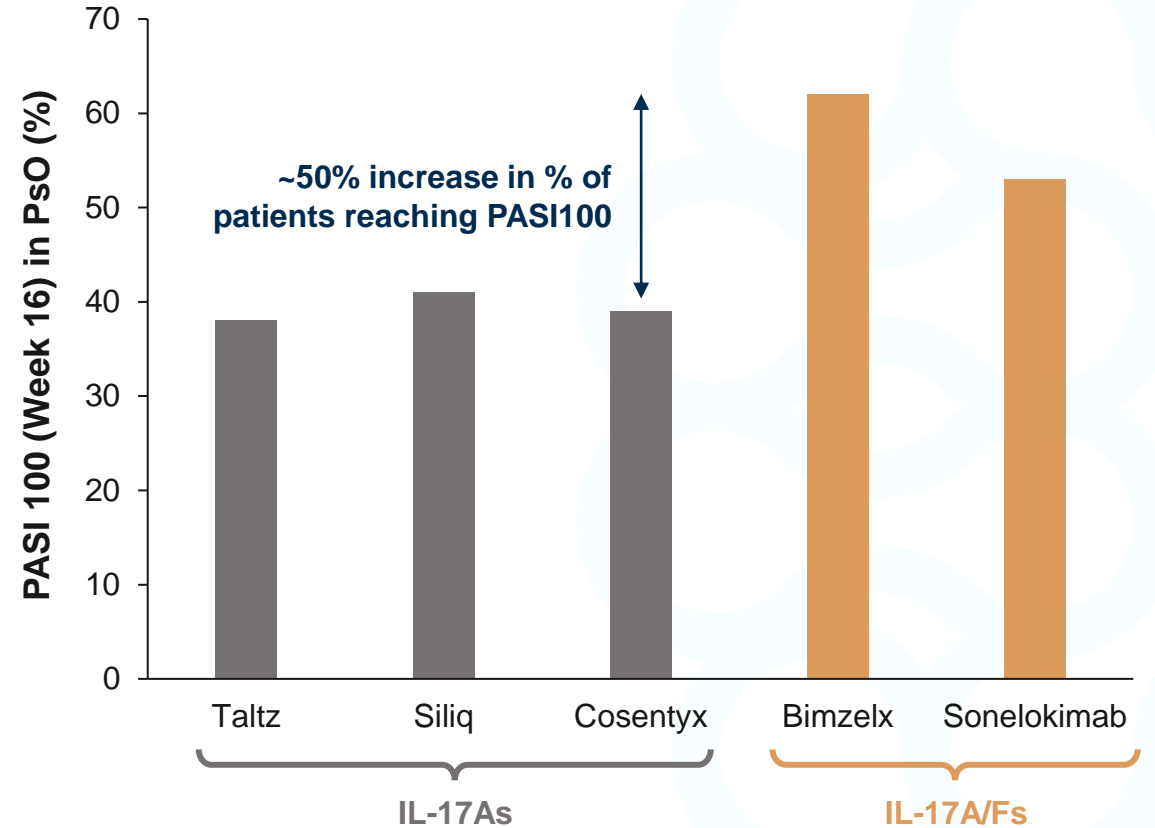
**ORKA-002:  
potentially best-in-class anti-IL-17A/F**



# IL-17A/F dual blockade has emerged as the superior strategy



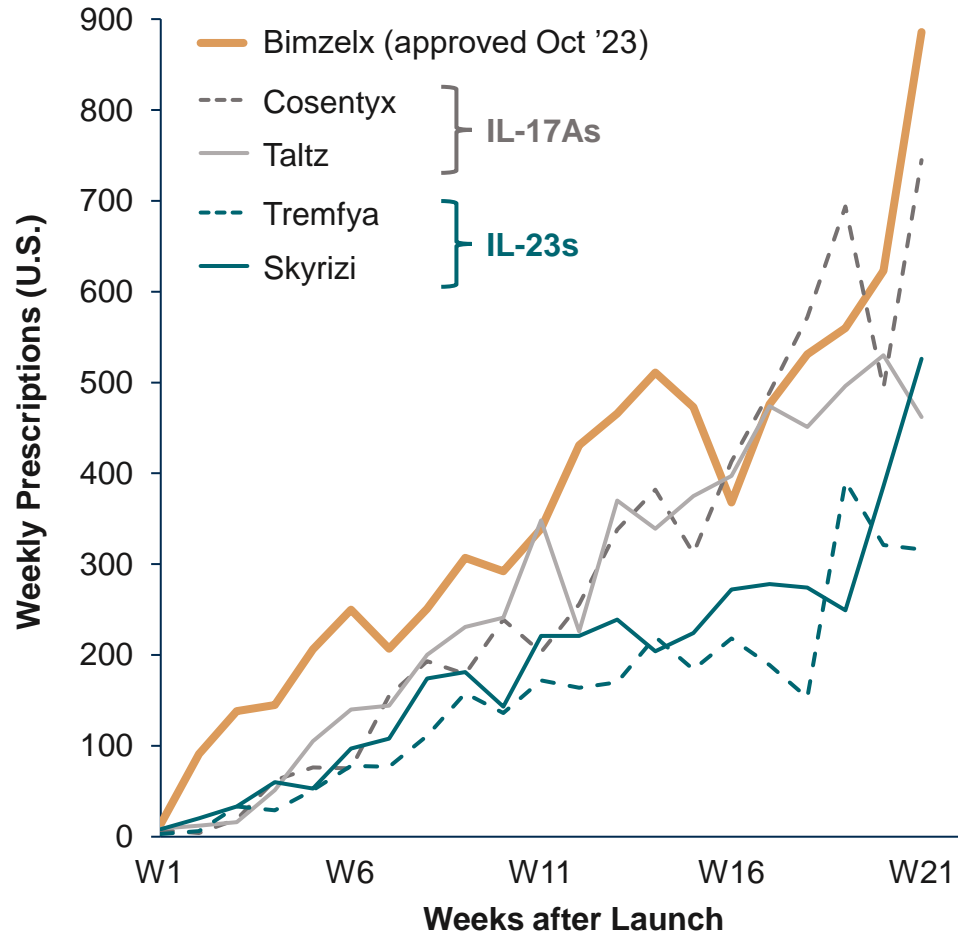
## Superiority of IL-17A/F in PsO – the largest target market



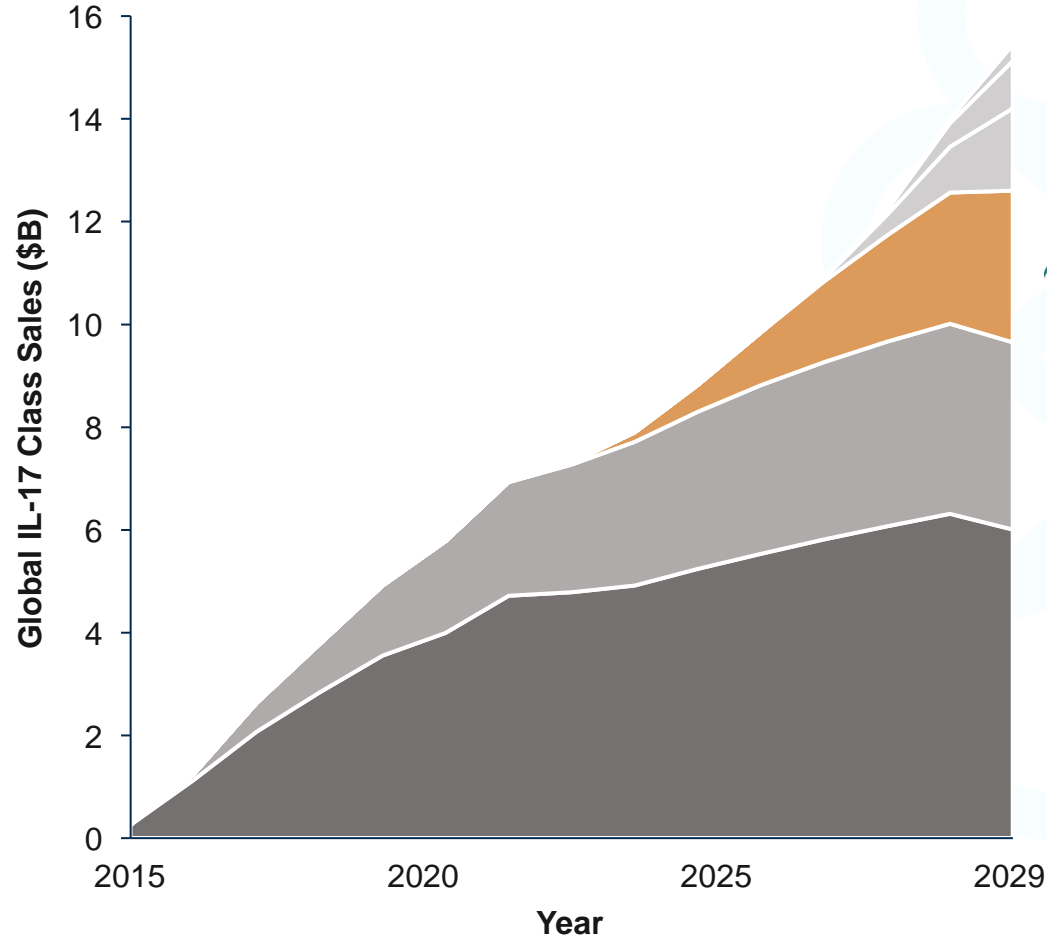
Superior efficacy in other indications as well (e.g., PsA, HS, axSpA)

# Bimzelx is showing signs of massive peak sales potential

Very strong launch in PsO shows potential, and ability to differentiate in this market



Capturable market of \$15B+ across all indications by 2030



Therapy	Target
DC-806	IL-17A
Sonelokimab	IL-17A/F
Izokibep	IL-17A/A
<b>Bimzelx®</b> (bimekizumab-bkzx)	IL-17A/F
<b>taltz®</b> (ixekizumab)	IL-17A
<b>Cosentyx®</b> (secukinumab)	IL-17A

# The two leading IL-17A/Fs leave room for improvement



## Sonelokimab

## ORKA-002 (TPP)

### Format

Full-length, dual targeting mAb

Trivalent structure with nanobodies targeting IL-17A/F, IL-17F, and albumin

Full-length, dual targeting, half-life extended mAb

### PsO regimen

#### Doses per year (maintenance)



#### Single SC injection



### Safety and efficacy

#### Clear dose response



Expected **similar to Bimzelx**

#### Minimal risk of neutralizing ADAs

~15-25% of patients had ADAs; **no clinical impact**

~30% of patients had ADAs in Phase 1; TBD in late-stage trials

Expected **similar to Bimzelx**

# ORKA-002 could be the best-in-class IL-17A/F inhibitor

## Similar epitope to Bimzelx (bimekizumab) with equal or better potency

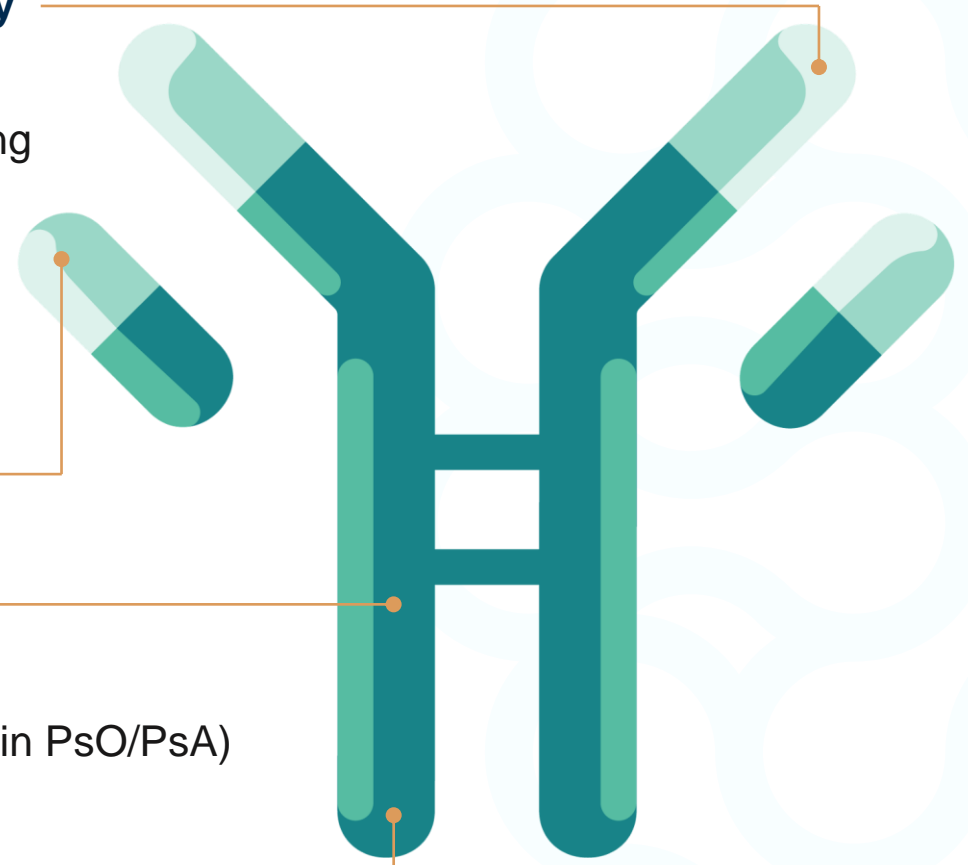
- Validated mechanism of action
- Binds **IL-17A and IL-17F** to prevent homodimer and heterodimer signaling
- **Equal or greater affinity** vs. bimekizumab
- Predicted **equivalent safety**
- Predicted to **meet or beat efficacy**

## Novel IP for composition of matter into 2040s

## Half-life extension through validated Fc modification

- **Higher exposure** to increase efficacy
- **Longer exposure** to reduce dosing frequency (targeting 2-3 doses/year in PsO/PsA)

## Effector-null human IgG1 Fc





# ORKA-002 could be best-in-class in a \$15B market

## Best target

**Dual IL-17A/F inhibition has shown superior efficacy vs. IL-17A inhibition, with \$15B+ in future market potential**

## Best profile

**Skyrizi-like dosing intervals in a convenient single injection while minimizing biological risk by pursuing the Bimzelx MoA**

## Limited competition

**Only two clinical stage IL-17A/F dual inhibitors, with lengthy timeline to biosimilar entry**

## Rapid development path

**Ph1 HV study de-risks PK and dosing interval, with potential for rapid development path (Bimzelx took ~6 years from IND to BLA)**

**Corporate**



# Single fundraise could support multiple inflection points



**\$275M raise supports company through 2027, more than one year past multiple inflection points**

# Building rapidly with backing from Paragon



**Lawrence Klein**  
CEO



**Joana Goncalves**  
CMO



**Arjun Agarwal**  
SVP, Finance



**Laura Sandler**  
SVP, Operations



**Christopher Finch**  
VP, Corporate Development & Strategy



**Eugenia Levi**  
VP, Medical Affairs



**Christina Liang**  
Sr. EA & Operations Manager



**Andrew Blauvelt**  
Chair of Scientific Advisory Board

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Managing Member,  
Fairmount



**Sam Kulkarni**  
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CRISPR Therapeutics



**Cameron Turtle**  
CEO, Spyre Therapeutics



**Carl Dambkowski**  
CMO, Apogee Therapeutics



**Lawrence Klein**  
CEO, Oruka Therapeutics



# ARCA and Oruka transaction summary

## Overview

- **Transaction:** Transaction between ARCA Biopharma, Inc. (**ARCA**), including its wholly owned subsidiaries Atlas Merger Sub Corp. (**First Merger Sub**), Atlas Merger Sub II, LLC (**Second Merger Sub**), and Oruka Therapeutics, Inc. (**Oruka**)
- **Transaction Structure:** ARCA to acquire 100% of Oruka equity interests in reverse-triangle merger with Merger Sub, with Oruka surviving the merger as a wholly owned subsidiary of ARCA (followed by merger of Oruka with and into Second Merger Sub)
- **Rebrand:** Post-closing, ARCA will be renamed Oruka Therapeutics, Inc.
- **Interim Operating Covenants:** Customary interim covenants that limit both Oruka and ARCA to ordinary-course operations between signing and closing, subject to certain exceptions
- **Survival:** No survival of reps and warranties
- **Director / Officer Indemnification:** Oruka (post-closing) will be obligated to maintain indemnification of D&Os for at least 6 years post-closing. ARCA (pre-closing) required to procure six-year D&O insurance tail policy
- **Outside Date:** Six months from execution, with possible 60-day extension if Form S-4 is not effective
- **Timing:** Closing expected to occur during third quarter 2024
- **Post-Closing Shares Outstanding:** On an as-converted basis and after accounting for these transactions, the total number of shares of common stock of the company outstanding post-closing is expected to be approximately 596,040,033

## Post-Closing Ownership; Closing

- **Post-Closing Ownership:** Oruka holders to own ~97.6% (~58.3% attributable to PIPE shares) of combined enterprise (f.d.) and ARCA holders to own ~2.4%, assuming ARCA Net Cash at closing of \$5M and a PIPE of \$275M, subject to certain limited adjustments for customary items
- **Certain Closing Conditions:**
  - **Form S-4:** Form S-4 shall have become effective with SEC (see “SEC Filings” below)
  - **Reps Bringdown:** materiality scrape on MAE- and materiality-qualified reps, brought down to MAE standard; capitalization rep brought down flat, subject to de minimis exceptions; fundamental representations brought down in all material respects
  - **Interim Covenants:** perform or comply in all material respects; no MAE
  - **Oruka Stockholder Approval:** holders representing (i) majority of capital stock on as-converted basis and (ii) a majority of Series A preferred shares
  - **ARCA Stockholder Approval:** holders representing majority of common stock
  - **Lock-Up Agreements:** lock-up agreements delivered at signing shall remain in place
  - **PIPE:** PIPE proceeds of at least \$175M shall have been received by Oruka
  - **Nasdaq Application:** Nasdaq application covering merger shares shall be submitted
  - **ARCA Dividend:** ARCA dividend of net cash in excess of \$5M, if any, shall have been received by Transfer Agent

## PIPE

- **Concurrent Investment:** ~\$275M of PIPE proceeds, including ~\$80M from existing Oruka investors and ~\$195M from new investors, led by Fairmount
- **Registration Rights Agreement:** Company agrees to register any shares that would be subject to Rule 144 limitations (i.e., affiliates) on resale registration statement
- **Certain Closing Conditions (Subscription Agreement):**
  - **Reverse Merger:** Closing conditions under the merger agreement must have been met
  - **Reps:** MAE- and materiality-qualified reps brought down flat; other reps brought down in all material respects
  - **Interim covenants:** Use commercial reasonable efforts to comply
- **Closing:** Expected to occur immediately prior to closing of the reverse merger

## Other Agreements

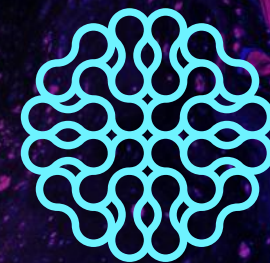
- **SEC Filings:**
  - Parties expect to file Form S-4 in May 2024 registering the ARCA shares to be issued (and “constructive” registration of Oruka offering to ARCA stockholders per Rule 145(a))
  - Directors & Executive Officers to file Forms 3, 4 & 5 following the Closing Date
  - Resale registration statement covering Oruka affiliates to be filed promptly post-closing
- **Support Agreements:** Directors / officers and certain affiliated investors to sign support agreements, agreeing to vote in favor of and otherwise support the transaction
- **Lock-Up Agreements:** Directors / officers and certain affiliated investors to sign 180-day lock-up agreements prohibiting (subject to certain exceptions) post-closing transactions in Oruka’s securities during the lock-up period

# Estimated capitalization following close of transactions

		Shares on an as-converted basis	Expected ownership of the combined company	Estimated dividend per share
<b>ARCA biopharma</b>	<ul style="list-style-type: none"> <li>Shares of common stock outstanding</li> </ul>	14.5M	2.4% <sup>1</sup> +	\$1.38 <sup>2</sup>
<b>Oruka Therapeutics</b>	<ul style="list-style-type: none"> <li>Shares of common stock outstanding</li> <li>Series A shares</li> </ul>	72.6M 153.5M		
<b>Pre-closing financing<sup>3</sup></b>	<ul style="list-style-type: none"> <li>Shares of common stock</li> <li>Pre-funded warrants</li> </ul>	270.4M 85.0M	97.6%	N/A
<b>Estimated total shares of common stock of the combined company post-closing</b>		<b>596,040,033</b>		

Please refer to ARCA's SEC filings for additional information

(1) The percentage of the combined company owned by ARCA's stockholders is subject to adjustment based on the amount of ARCA's net cash at the closing date; (2) ARCA is expected to contribute \$5 million to the combined entity and expects to pay a dividend to pre-merger ARCA stockholders of ~\$20 million immediately prior to the close of the merger; (3) Oruka has secured commitments for a \$275 million private investment in Oruka common stock and pre-funded warrants from a syndicate of healthcare investors, which is expected to close immediately prior to completion of the merger.



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