azitra

CORPORATE PRESENTATION

January 2024

Precision dermatology powered by synthetic biology.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements concerning Azitra, Inc. ("Azitra", the "Company," "we," "us," and "our"). The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward- looking statements. These forward-looking statements include, but are not limited to, statements concerning the following:

- our future financial and operating results;
- our intentions, expectations and beliefs regarding anticipated growth, market penetration and trends in our business;
- the timing and success of our plan of commercialization;
- our ability to successfully develop and clinically test our product candidates;
- and the adequacy of the net proceeds of this offering.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including (i) we are an early-stage clinical biopharmaceutical company with limited operating history, (ii) there are no drug products to date that incorporate our microbial library and genetic engineering platform and the clinical and commercial utility of our microbial library and genetic engineering platform is uncertain and may never be realized; (iii) we have only recently commenced Phase 1 clinical studies of our initial product candidates and our product candidates will require extensive additional preclinical and clinical testing; (iv) we expect we will need additional financing to execute our business plan and fund operations, which additional financing may not be available on reasonable terms or at all; and (v) those other risk described in "Risk Factors" section of the prospectus ("Prospectus") dated June 15, 2023 filed by Azitra with the Securities and Exchange Commission on June 21, 2023.

In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this document may not occur and actual results could differ materially and adversely from those anticipated or implied in our forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur. Azitra does not undertake and specifically disclaims any obligation to update or revise our forward-looking statements to reflect new circumstances or unanticipated events as they occur, except as required by law.

This document contains only basic information concerning Azitra. Because it is a summary it does not contain all of the information you should consider with regard to Azitra. You should read the Prospectus for more complete information about Azitra.

Azitra is led by world-class management team

Francisco Salva, MSc.
President and CEO

- Prior Co-Founder and VP of Operations at Acerta Pharma – Sold for $6.3 billion
- Formerly Senior Director –Corporate Development at Pharmacyclics
- 25+ years experience in life science venture capital, investment banking and operating roles

Travis Whitfill, M.P.H.
Co-Founder and
Incoming COO

- Partner at Bios Partners
- Assistant Professor Adjunct in the Department of Pediatrics at Yale University
- Named one of Forbes' 30 Under 30 in healthcare in 2018

Norman Staskey, CPA
CFO

- Currently Acting CFO via Danforth Advisors
- Previously, Managing Director E&Y
- 20+ years accounting experience, including multiple IPO, SPAC and M&A transactions

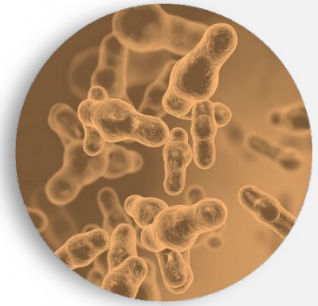
Roger Leger, Ph.D.
Vice President – Chemistry and
Formulation

- Prior Senior Director Chemistry and CMC at Thrasos (Kidney Diseases)
- Former VP Research Indel Therapeutics Inc (Antimicrobials)
- Former VP Chemistry and Co-Founder Ulysses Pharmaceuticals Inc (Bacterial Infections)

Leonard Milstone, M.D.
Professor Emeritus of Dermatology
Yale School of Medicine
Azitra Scientific Advisory Board

- Led the group that first demonstrated gene editing in the epidermis
- Discovered the unique proteoglycan Epican as well as keratins 4 and 13
- Former Chair, Medical and Scientific Advisory Board, Foundation for Ichthyosis and Related Skin Types

Precision dermatology powered by synthetic biology and the metagenome

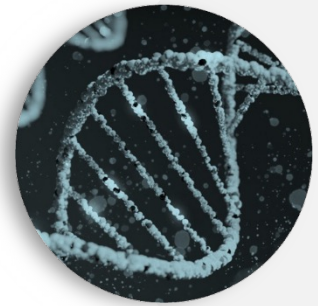


Bacterial Cell Library

- Proprietary, robust library of **~1,500 microbial strains**
- Engineered and non-engineered bacterial chasses
- Over 60 species in house, mostly *Staphylococcus epidermidis*

Collaboration for Artificial Intelligence / Machine Learning Discovery

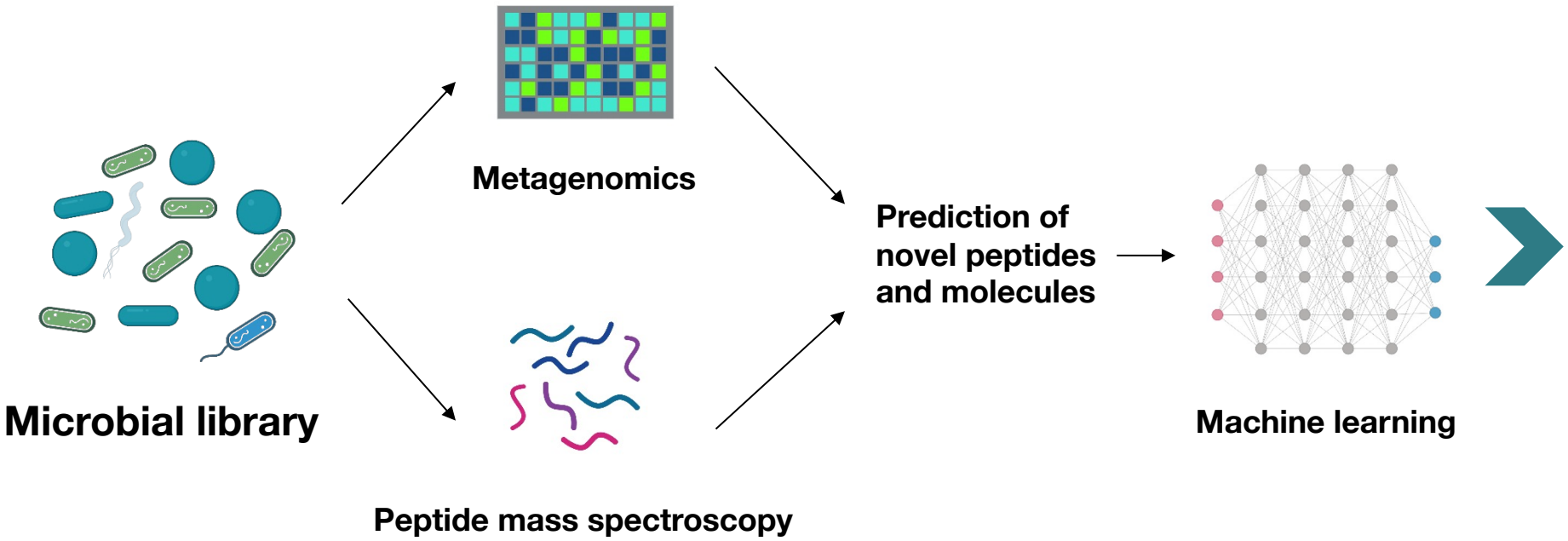
- Predictive algorithms for **novel microbial-derived proteins, peptides & small molecules**
  - Exclusive agreement covering specific strains with team from Carnegie Mellon
  - Based on genetic sequences and biosynthetic gene clusters
  - Includes post-assembly modifications & non-natural structures



Microbial Genetic Engineering Platform

- Demonstrated ability to make **novel transformations**
  - Exclusive worldwide license with Fred Hutchinson Cancer Center
  - Overcome restriction modification systems
- Successfully transformed gram positive microbes to overcome challenge of thick cell walls

Machine learning for novel drug discovery



AI/ML-driven drug discovery benefits:

- ✓ Expand possible universe of possible drug candidates
- ✓ Expand knowledge of function of skin bacteria
- ✓ Combine with phenotypic screens for accelerated target discovery and validation
- ✓ Potential to cut 1-3 years off the discovery stage into clinical testing

Azitra's pipeline creates near-term value

FDA-regulated candidates for drug development

DISCOVERY | PRECLINICAL | PHASE 1 | PHASE 2 | PHASE 3 | COMMERCIALIZATION

ATR-12: LEKTI-secreting *Staphylococcus Epidermidis ("SE")* — **Netherton syndrome**

ATR-04: *SE* epidermin secreting auxotroph — **EGFR inhibitor associated rash**

ATR-01: Filaggrin-secreting auxotroph — **Ichthyosis vulgaris**

Consumer/Cosmetic Product Development

RESEARCH | SAFETY TESTING | COMMERCIALIZATION

Consumer Health Programs: Improve skin appearance and texture — **Joint Development Agreement with** BAYER

ATR-12 Program

Netherton Syndrome

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ATR-12: LEKTI-Secreting *Staphylococcus epidermidis* for Netherton syndrome

ATR-12 Summary

- **Netherton syndrome** is a rare, orphan autosomal recessive disease with no current FDA-approved treatment option
- Characterized by severe inflammation, pruritus, scaling, red, and dehydrated skin
  - Caused by mutations in the *SPINK5* gene, which encodes the serine protease inhibitor, **LEKTI** (lympho-epithelial Kazal-type related inhibitor)
  - Results in overactive proteases causing desquamation, skin barrier defects, and activation of inflammation
  - ~10% mortality rate in infants
- **Mechanism of action:** Auxotrophic ATR-12 inhibits the overactive proteases through LEKTI fragment secretion
- **Pediatric Rare Disease Designation** received from FDA

ATR-12 Key Facts

Primary Mechanism:
Kallikrein Inhibition

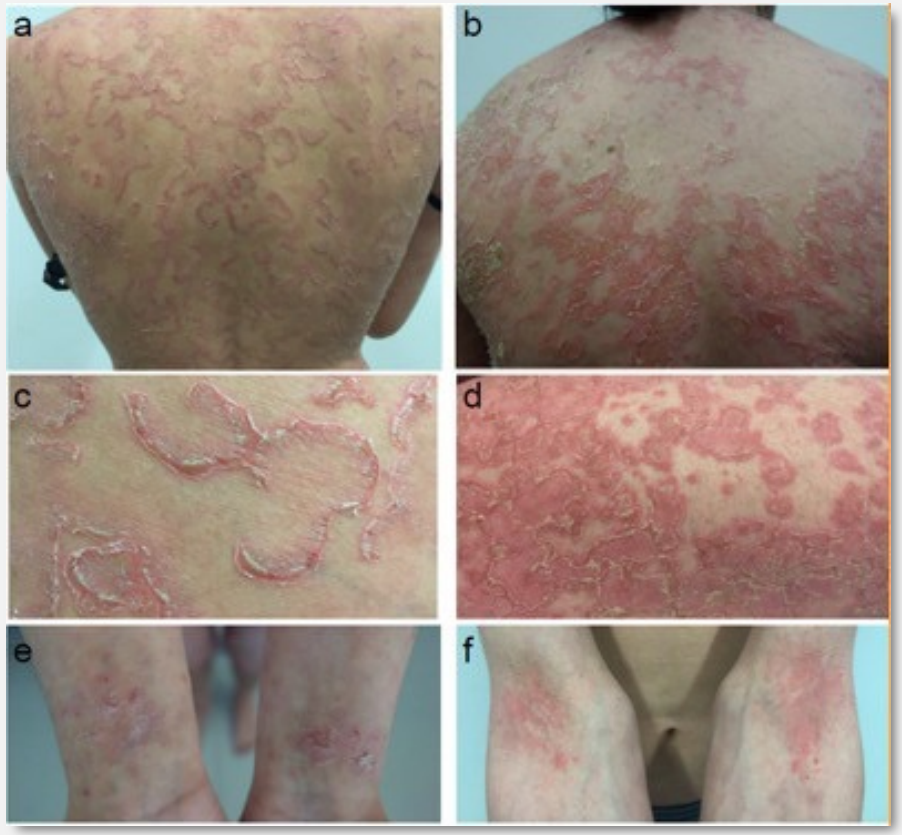
Clinical Status:
Phase 1b

Global Prevalence:
~20K+ Patients

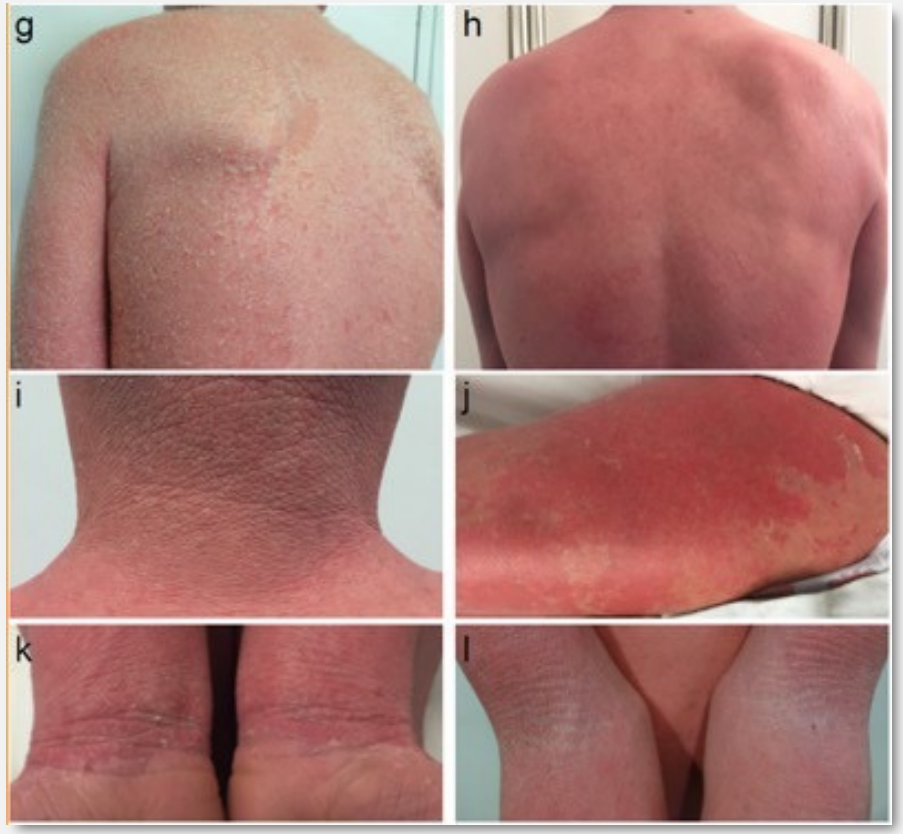
Peak Sales Opportunity:
~$250M

Two Netherton syndrome phenotypes are driven by *SPINK5* mutations

Ichthyosis Linearis Circumflexa (ILC)

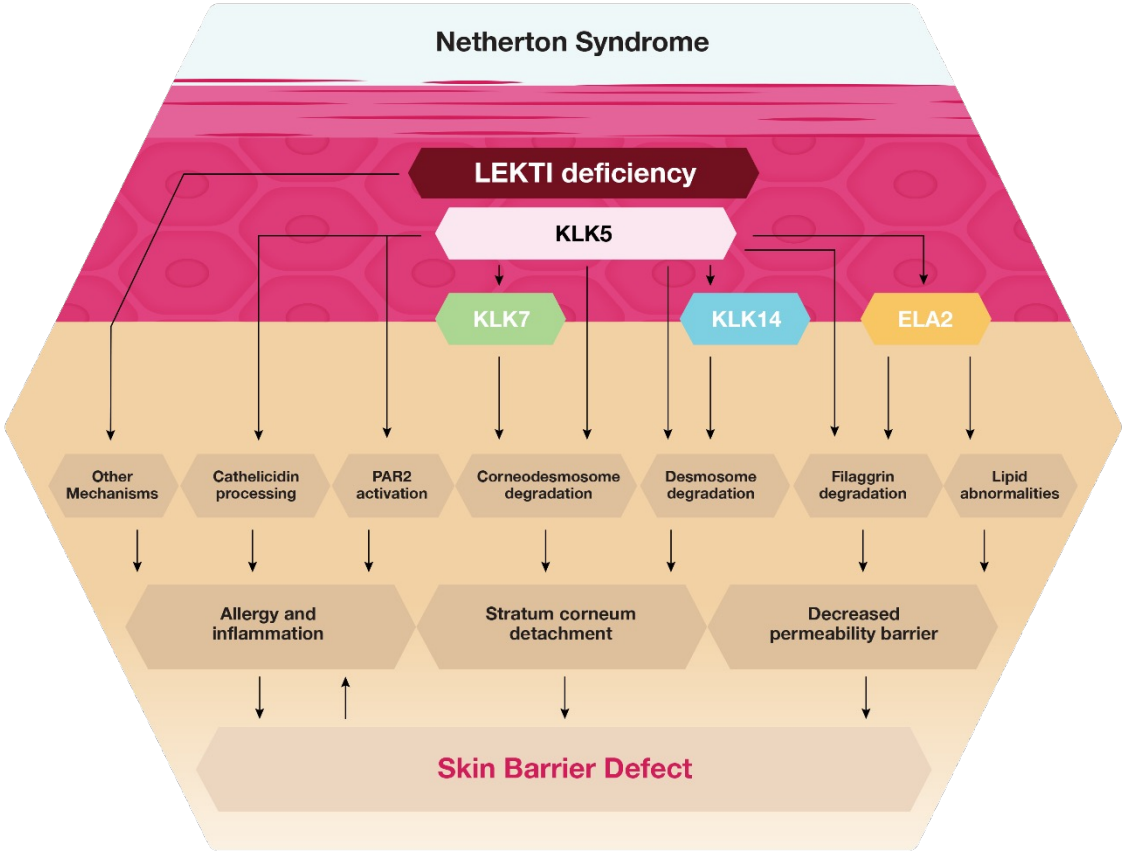


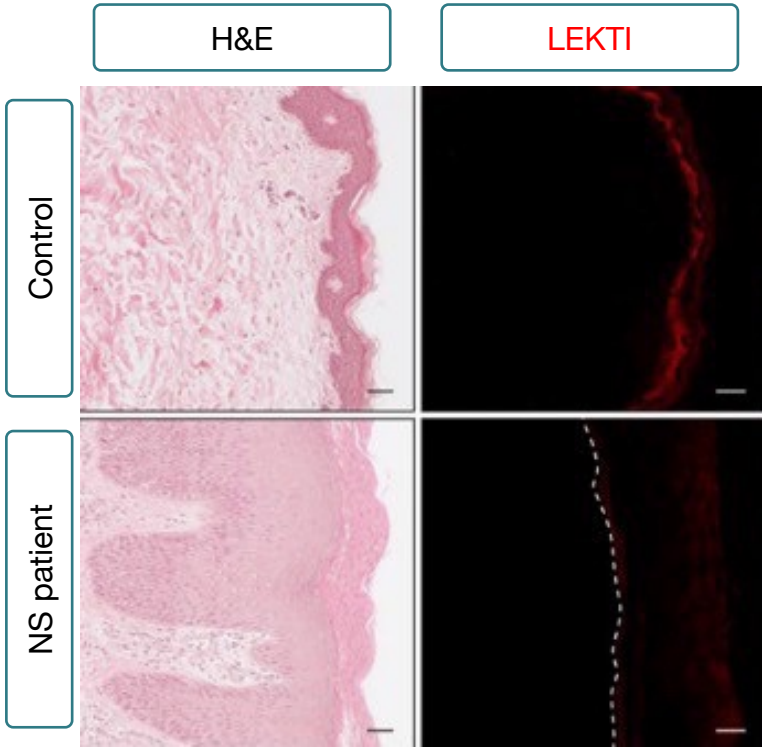
Scaly Erythema (SE)



Barbieux et al, J Allergy Clin Immunol 2021

Rationale to target KLK5 in Netherton syndrome via LEKTI delivery





Mintoff, Fischer, *Mol Genet Genomic Med*., **2021**, *9*, e1611

- LEKTI fragments inhibit KLK5, KLK7 and KLK14 and controls desquamation
- In NS patients, overactive KLKs lead to disease

- Netherton syndrome patients have undetectable levels of LEKTI in skin

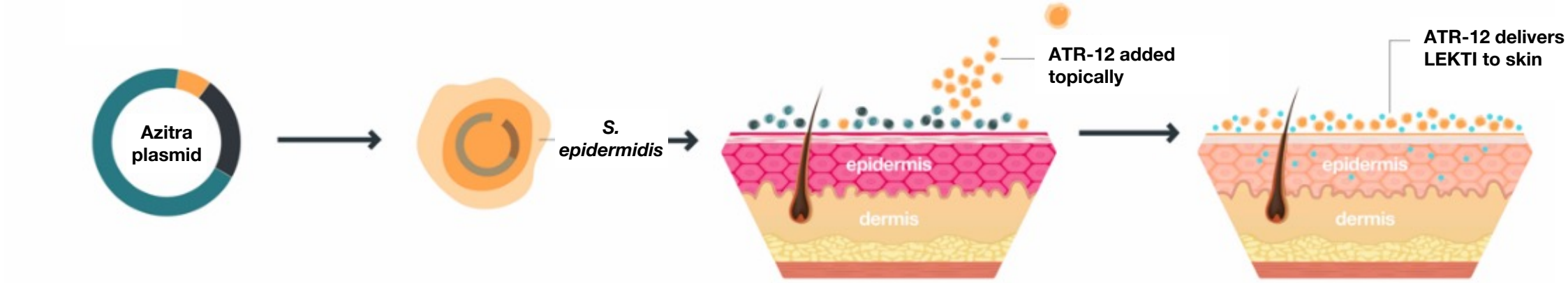
Engineering *S. epidermidis* into ATR-12 for Netherton syndrome

1 Insert *SPINK5* gene fragment that encodes LEKTI

2 Insert gene into chromosome of *S. epidermidis*

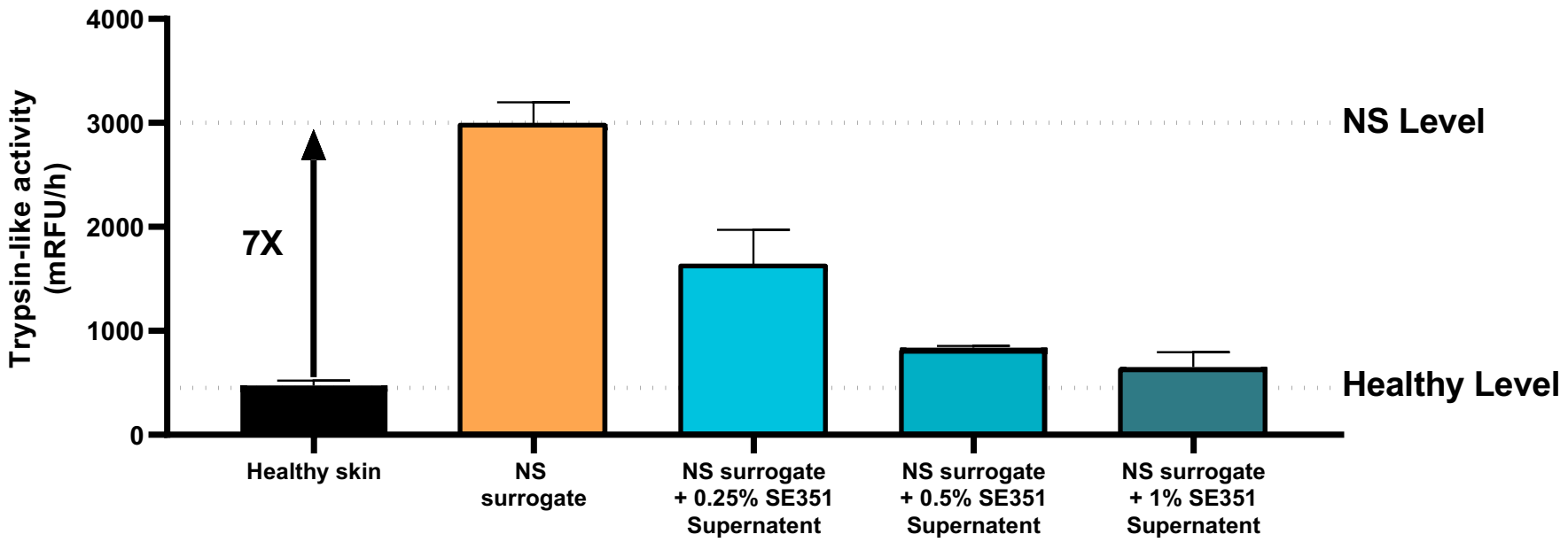
3 Colonize Netherton syndrome skin with ATR-12

4 Secrete LEKTI to inhibit kallikreins for therapeutic treatment



Ex vivo activity of ATR-12 shows decreased trypsin-like activity

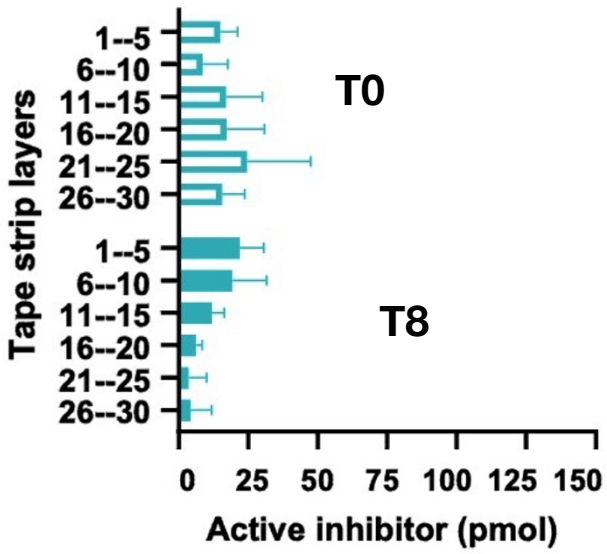
***S. epidermidis* strain SE351 (LEKTI-secreting) spent broth (SB) inhibition of human skin tape stripped extracts**



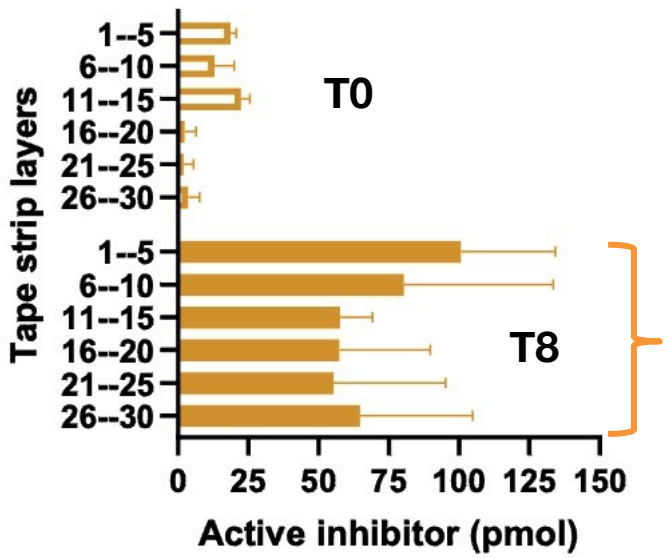
- ✓ Trypsin-like activity (key measure of protease activity in NS patients) decreased after addition of spent broth from LEKTI-secreting strain SE351 in ATR-12
- ✓ Dose-dependent response seen across concentrations of supernatant

Penetration of LEKTI-like activity into *ex vivo* human skin

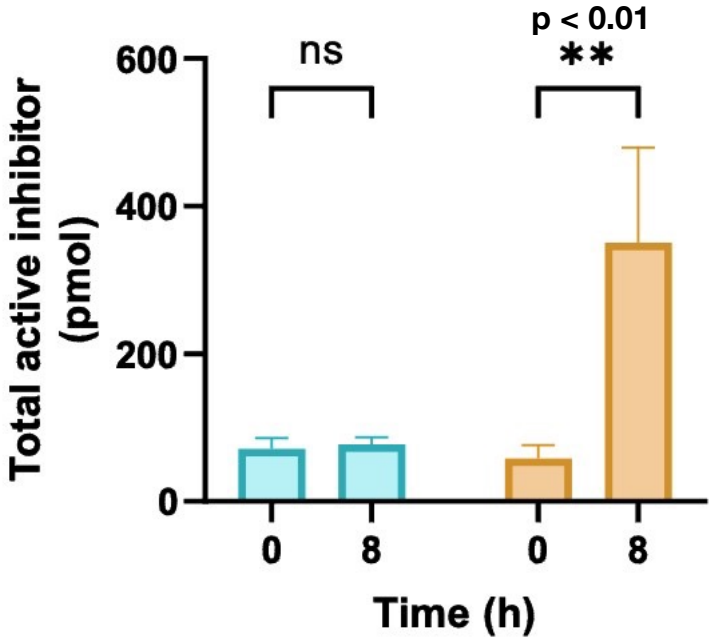
Vehicle



ATR-12



Total LEKTI activity



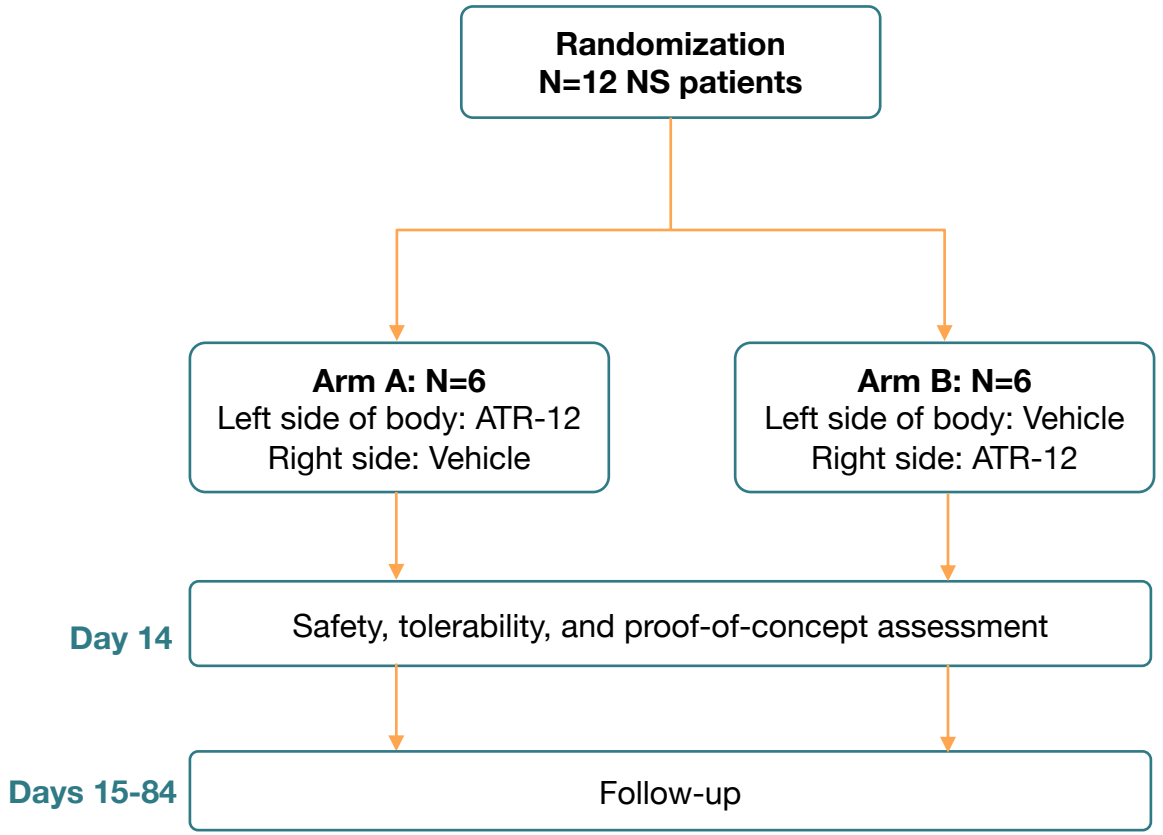
- ✓ LEKTI activity is significantly higher after 8 hours compared to T0 in all layers following ATR-12 application
- ✓ The LEKTI activity penetrates to at least 30 layers deep in substantial amounts

Phase 1 clinical trial design

Study overview

- Multicenter, randomized, double-blind, vehicle-controlled Phase 1 study in adult Netherton syndrome patients
- Dose level: 10^9 CFU / g ATR-12
- N=12 patients dosed twice daily over 14 days
- Primary endpoint: safety and tolerability
- Secondary endpoints:
  - Efficacy endpoints
  - Pharmacokinetics
- Exploratory endpoints:
  - Biomarkers: KLK5, KLK7, IL-36, TARC/CCL17, trypsin-like activity, and chymotrypsin-like activity

Design



ATR-04 Program

EGFR inhibitor-associated rash

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ATR-04: auxotrophic *S. epidermidis* for EGFR inhibitor-associated rash

ATR-04 Summary

- Chemotherapy agents such as EGFR inhibitors and immunotherapies such as early BTK inhibitors lead to an aggressive and debilitating rash on most patients
- Severity of the rash is linked to IL-36g signaling as well as correlations to *S. aureus* increases
- EGFR inhibitors produce the most prevalent and most predictable affliction
- **ATR-04** is topically administered and inhibits IL-36g and *S. aureus*

ATR-04 Key Facts

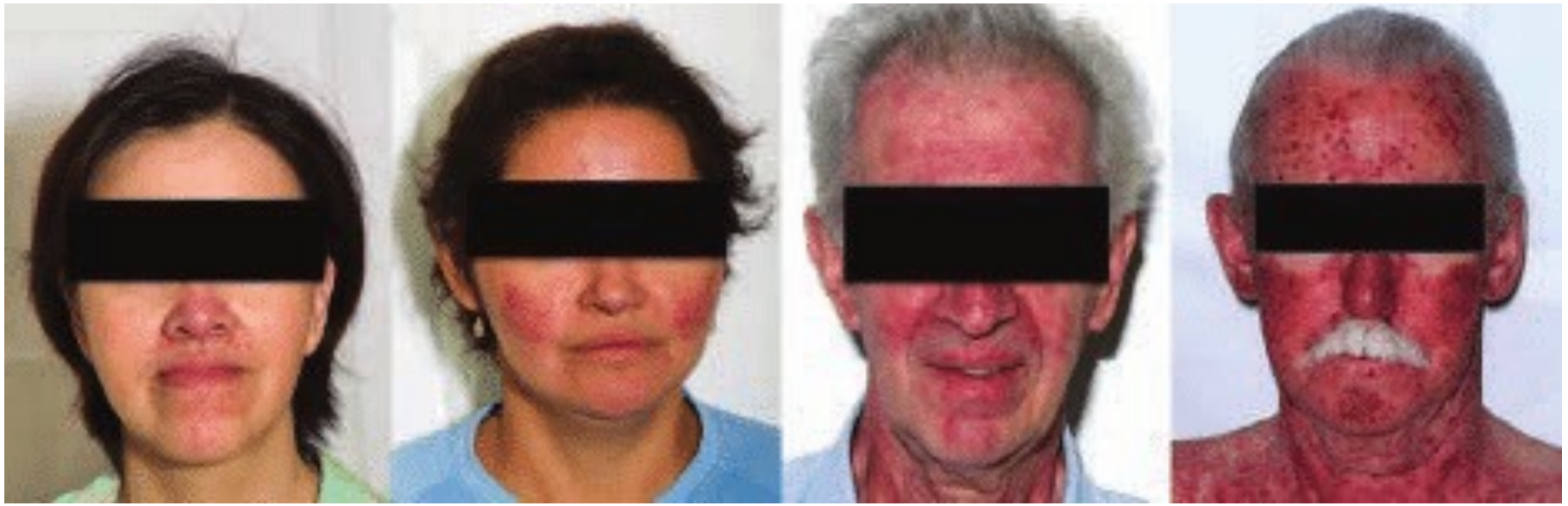
Primary Mechanism:
IL36g Inhibition, *S. aureus* control

Clinical Status:
IND filing expected mid-2024

US Prevalence:
~150,000 patients

Peak Sales Opportunity:
>$1B

EGFRi-driven rash is highly prevalent with significant clinical impact

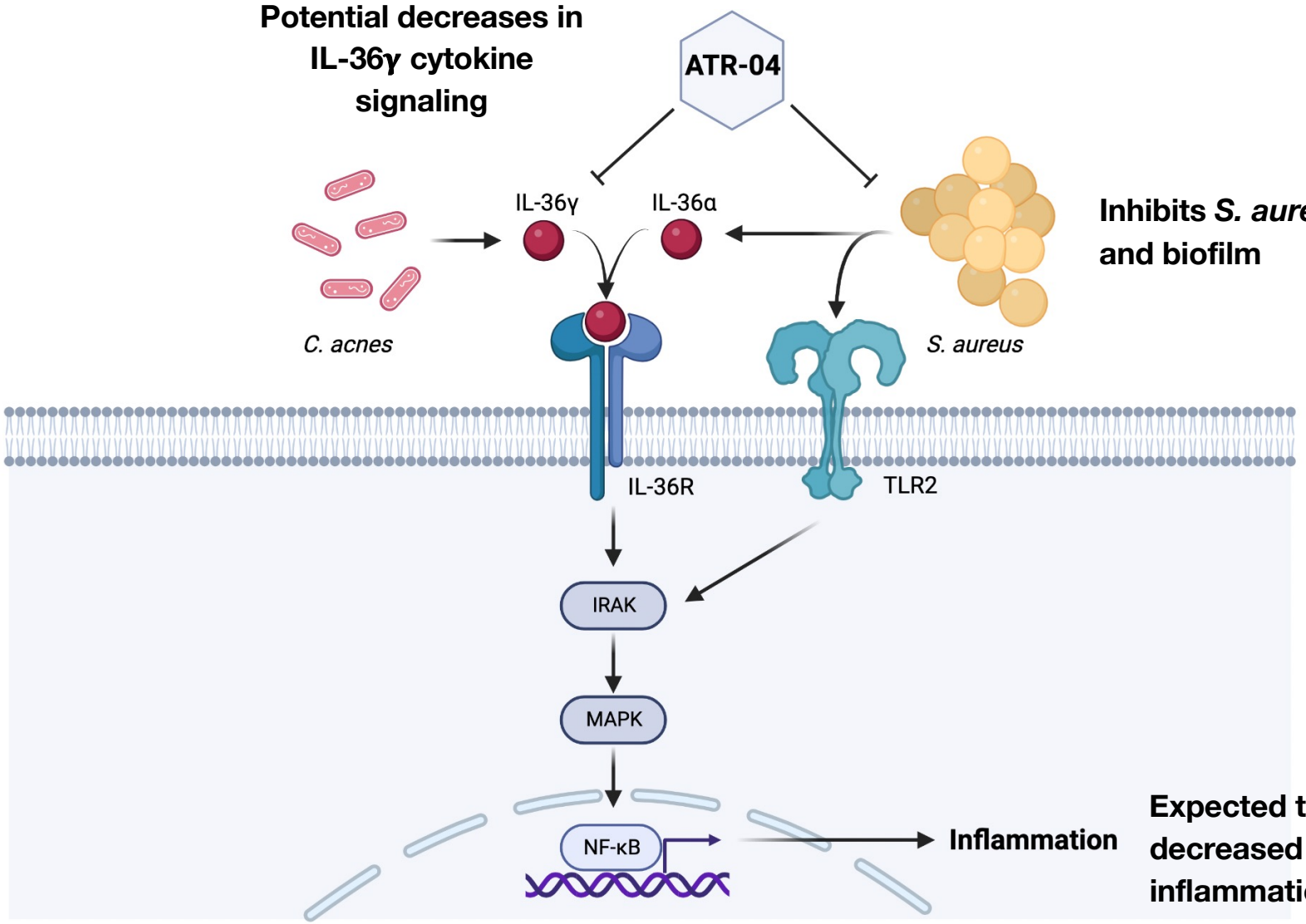


Grade 1	Grade 2	Grade 3	Grade 4

- Rash severity often linked to cancer drug dosing and correlates with *S. aureus* levels on the skin
- Rash can lead to significant changes in course of therapy and QOL
- **As many as 15-20% discontinue EGFRi therapy due to skin rash**

Source: Melosky et al. (2015). Grade 1, gefitinib; grade 2, erlotinib; grade 3, erlotinib; grade 4, erlotinib

Proposed mechanism of action of ATR-04



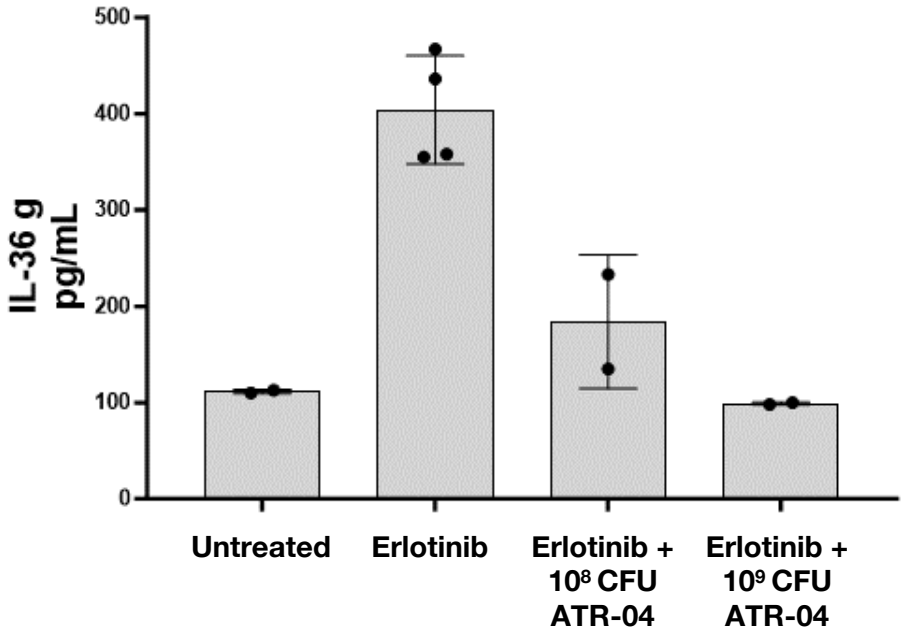
Inhibits *S. aureus* growth and biofilm

Expected to lead to decreased inflammation

Collectively, ATR-04 addresses rash severity driven by EGFR inhibition

In vitro data show ATR-04 reduces erlotinib-induced IL-36g

Reconstructed human epidermis



- ✓ IL-36g is elevated in reconstructed human epidermis following erlotinib exposure
- ✓ ATR-04 reduces IL-36g induced by erlotinib
- ✓ Dose-dependent effect observed

Collaborations and Future Directions

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Bayer consumer health product joint development partnership

- ✓ Long-established expertise in dermatology and consumer skin health
- ✓ Global brand recognition
- ✓ Formulation, marketing and regulatory expertise

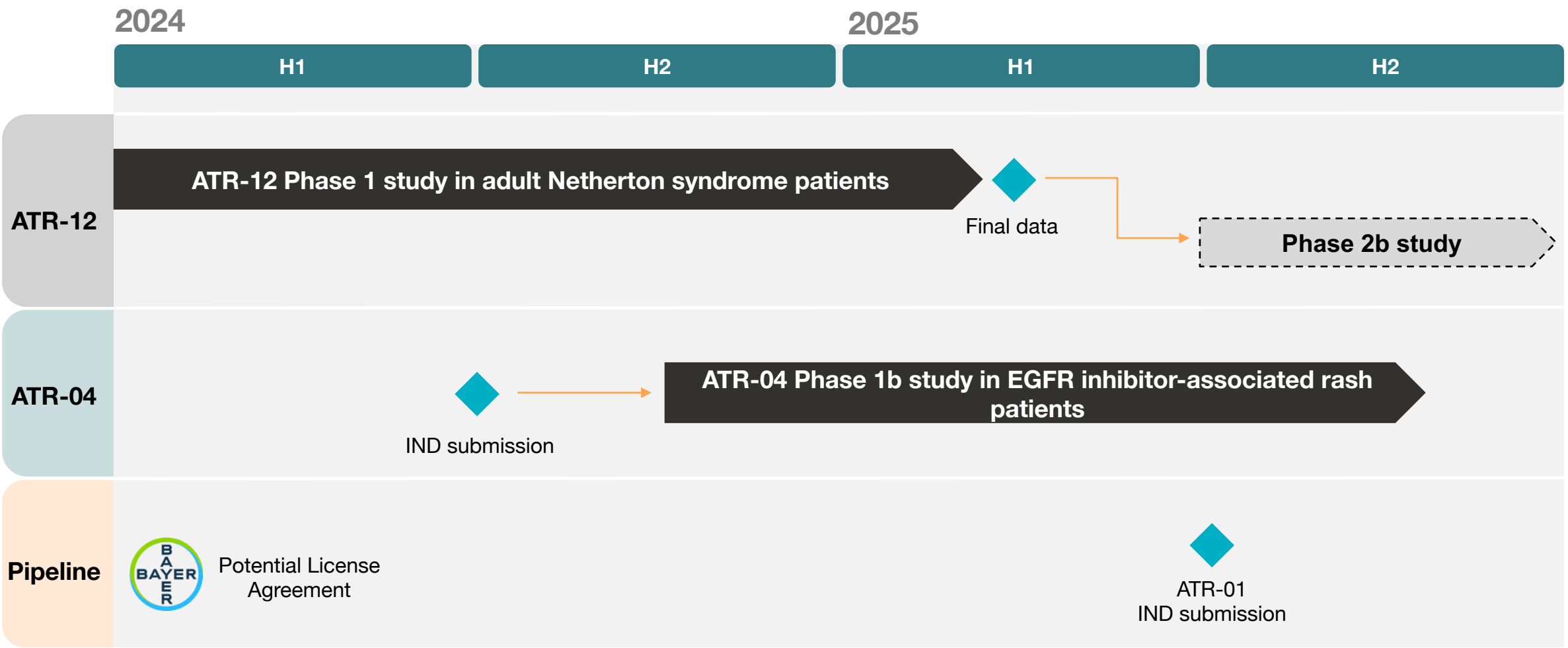
- ✓ Deep expertise, broadly applicable platform, and 1,500+ proprietary *S. epidermidis* strains
- ✓ Translational leader in dermatology and *S. epidermidis* biology
- ✓ Key academic and clinical collaborator network

Build a leading, world-class consumer care product line

Joint Development Agreement overview:

- ✓ Joint development on *S. epidermidis* strains and products for eczema-prone skin
- ✓ Azitra is responsible for early research, and Bayer is responsible for clinical development and commercialization

ATR-12 and ATR-04 bring value-creating milestones in 2024-2025



Robust intellectual property with key patents issued

2038
***Treating skin disease with recombinant organisms**

**Issued*

2038
Treatment of skin disease with recombinant commensal skin microorganisms

2038
***Auxotrophic strains of Staphylococcus bacteria**

**Issued*

2038
Filaggrin subunits for treatment of eczema and ichthyosis vulgaris

2039
LEKTI for Pruritis, Pain, Inflammation

Formulations for stabilizing microbiome products

2034
***Treating atopic dermatitis with recombinant organisms**

**Issued*

2038
Treating inflammatory skin disease with recombinant organisms

2038
Commensal bacteria to treat cancer associated rash

2038
Cosmetic compositions with engineered bacteria

2038
Treatment of Netherton syndrome with LEKTI expressing microbes

2039
LEKTI for treating skin cancer

Capitalization table

	As of December 31, 2023
Common Shares	**12,097,643**
Warrants (WAEP: $4.75)	**323,736**
Options (WAEP: $1.36)	**1,288,255**
Fully Diluted Shares Outstanding:	**13,709,634**

Investment Highlights

Azitra well-positioned to take advantage of synthetic biology innovations

Established platforms for precision dermatology

- ✓ Established manufacturing and formulation systems
- ✓ Orphan dermatology indications
- ✓ Multiple shots on goal for 2023-2024

Strong business foundation

- ✓ $~40 million invested to date, including Bayer
- ✓ Comprehensive intellectual property

Partnerships to expand the pipeline

- ✓ Key collaboration with top-tier consumer health corporation, Bayer
- ✓ Partnerships with top-tier academic institutions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THANK YOU
Precision dermatology powered by synthetic biology.

APPENDIX

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ATR-12 is a differentiated approach for Netherton syndrome

	Company	Asset	Description	Status	Topical treatment	Protein replacement	Disease Modifying
Kallikrein inhibitors	azitra	ATR-12	*S. epidermidis* strain engineered to express LEKTI; topical	IND-enabling	☑	☑	☑
	SIXERA PHARMA	SXR1096	KLK inhibitor; topical	Phase 1 (EU)	☑		☑
Gene therapy	MoST a bridgebio company	BBP-561	KLK5/7 inhibitor; topical	IND-enabling	☑		☑
	Krystal	KB104	Gene therapy; topical (admin at home)	IND-enabling	☑		☑
Other	Investigator-initiated trial	Cosentyx[1]	IL-17A antibody; subcutaneous injection	Phase 2			
	AnaptysBio	ANB019[1]	IL-36R antibody; injection	Phase 2			
	MatriSys BIOSCIENCE	MSB-6005	Skin microbiome therapy; topical	Preclinical	☑		
	QUOIN PHARMACEUTICALS	QRX-003	Protease inhibitor; topical	Phase 2	☑		

[1] Under investigation for broader category of ichthyoses.

ATR-04 is a differentiated approach for EGFRi-related skin toxicities

	Company	Asset	Description	Status	Topical treatment	Disease modifying	IL-36γ targeted	Notes
US-based	azitra	ATR-04	Epidermin-secreting *S. epidermidis* auxotrophic strain; anti-*S. aureus* and anti-IL-36γ; topical	IND-enabling	☑	☑	☑	IND submission planned by YE 2023
	LUTRIS	LUT-014	B-Raf inhibitor; topical	Phase 2	☑	☑		Phase 1 showed effect but did not reach statistical significance
	HOTHTHERAPEUTICS	HT-001	Immune cell inhibitor; topical	Phase 2	☑			505(b)(2) pathway. No previous clinical data
Ex-US	twiB	AC-707	Antibiotic and anti-inflammatory; topical	Phase 2	☑			No updated Phase 2 data since trial completion in 2021
	DAEWOONG	DWP708	Human HGF spray; topical	Phase 2 (Korea)	☑	☑		Korean IND cleared in 2022
	GENOME&CO	GEN-501	Microbiome-based therapy	Preclinical	☑			Little information available