

Filed Pursuant to Rule 433
Registration Statement No. 333-269876
Issuer Free Writing Prospectus dated April 11, 2023
Relating to Preliminary Prospectus dated April 10, 2023



CORPORATE PRESENTATION
April 2023

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 those described in "Risk Factors" section of the Registration Statement on Form S-1, as amended, initially filed by Azitra with the Securities and Exchange Commission on February 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.

This document contains only basic information concerning Azitra. Because it is a summary it does not contain all of the information you should consider before investing. This presentation shall not constitute an offer to sell, or the solicitation of an offer to buy, nor will there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of such state or jurisdiction.

Azitra has filed a registration statement (including a prospectus) with the SEC for the offering to which this communication relates. Before you invest, you should read the prospectus in that registration statement and other documents Azitra has filed with the SEC for more complete information about Azitra and this offering. You may get these documents for free by visiting EDGAR on the SEC Web site at www.sec.gov. Alternatively, we or any underwriter or any dealer participating in the offering will arrange to send you the prospectus if you request it by contacting ThinkEquity, Prospectus Department, 17 State Street, 41st Floor, New York, New York 10004, telephone: (877) 436-3673 or e-mail: prospectus@think-equity.com.

Offering summary

| | |
|-----------------------------------|--|
| Issuer: | Azitra, Inc. |
| Listing: | NYSE American: AZTR |
| Expected Offering Size: | \$12,000,000 |
| Shares Offered: | 2,400,000 Common Shares (with 15% Over-allotment Option) |
| Expected Price: | \$5.00 per Share |
| Use of Proceeds: | <ul style="list-style-type: none">• Approximately \$5 million to fund clinical trials and product development• Approximately \$3 million for research and development• Approximately \$1 million for clinical manufacturing• The balance for other general corporate purposes |
| Sole Book-Running Manager: | ThinkEquity |

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 Medical School
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





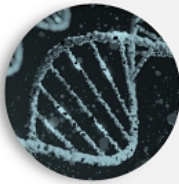
Bacterial Cell Library

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



Collaboration for Artificial Intelligence / Machine Learning Discovery

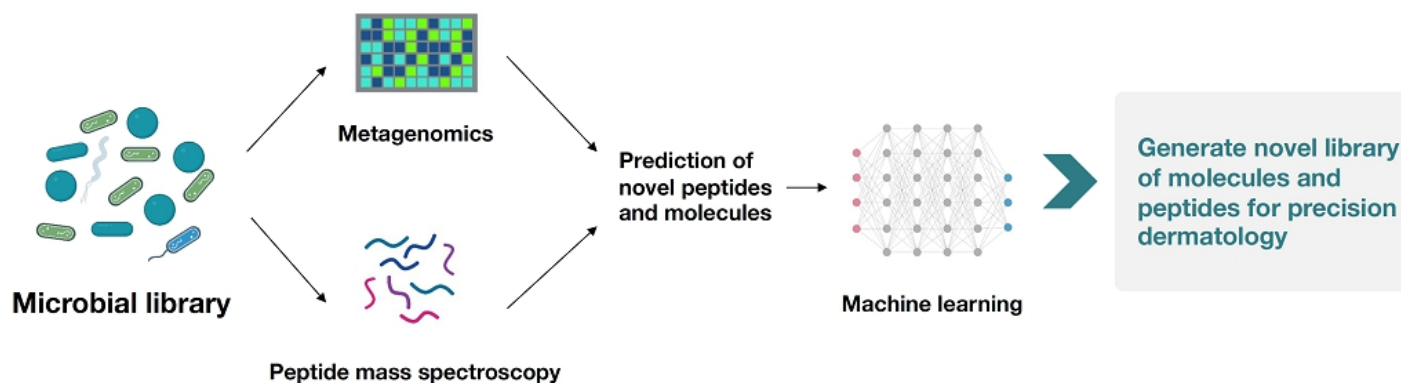
- Predictive algorithms for **novel microbial-derived proteins, peptides & small molecules**
 - Exclusive agreement covering specific strains with team from Carnegie Mellon
 - Based on genetic sequences and biosynthetic gene clusters
 - Includes post-assembly modifications & non-natural structures



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

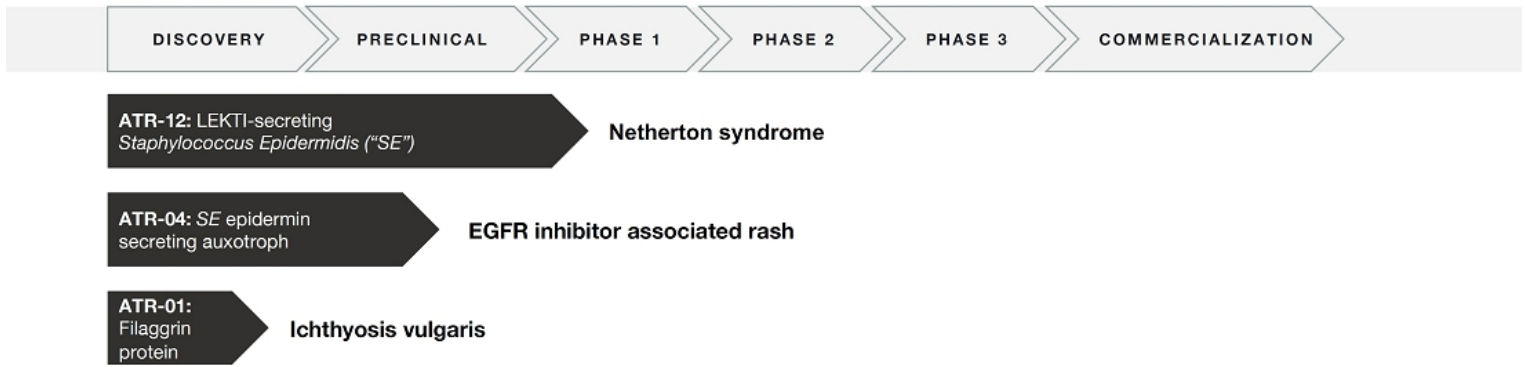


AI/ML-driven drug discovery benefits:

- ✓ 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



Consumer/Cosmetic Product Development





ATR-12 Program

Netherton Syndrome

 azitra

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 IND cleared in Jan. 2023



Global Prevalence:
~20K+ Patients



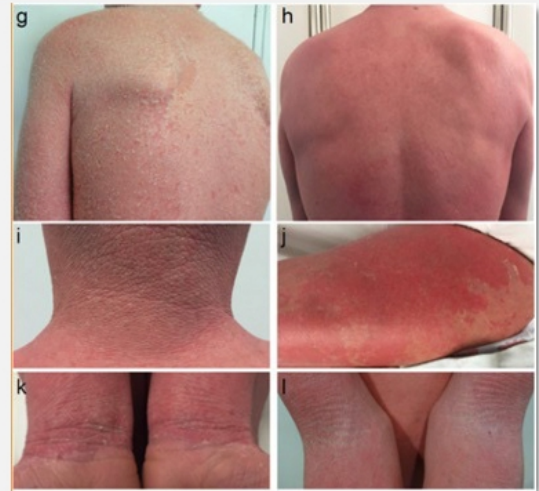
Peak Sales Opportunity:
~\$250M

Two Netherton syndrome phenotypes are driven by *SPINK5* mutations

Ichthyosis Linearis Circumflexa (ILC)

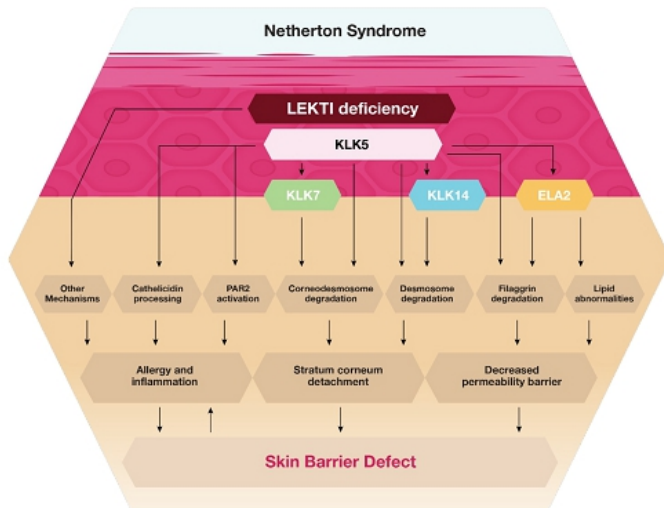


Scaly Erythema (SE)

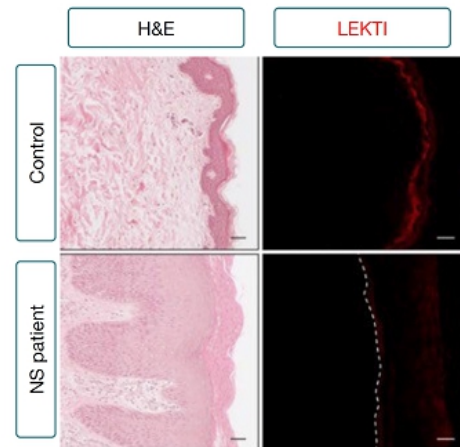


Barbieux et al, J Allergy Clin Immunol 2021

Rationale to target KLK5 in Netherton syndrome via LEKTI delivery



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

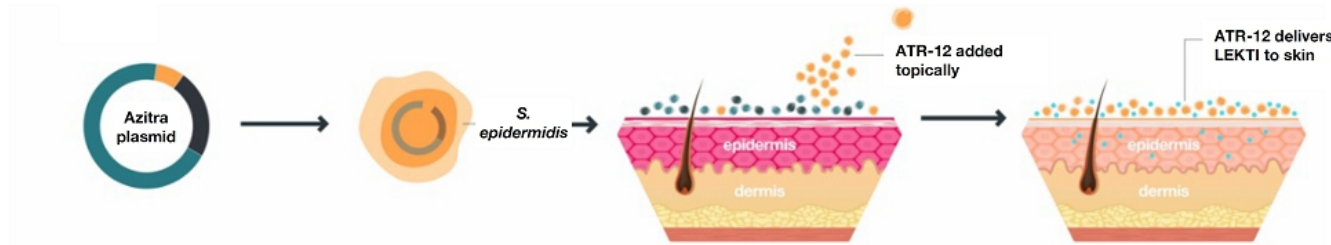


Mintoff, Fischer, *Mol Genet Genomic Med.*, 2021, 9, e1611

- Netherton syndrome patients have undetectable levels of LEKTI in skin

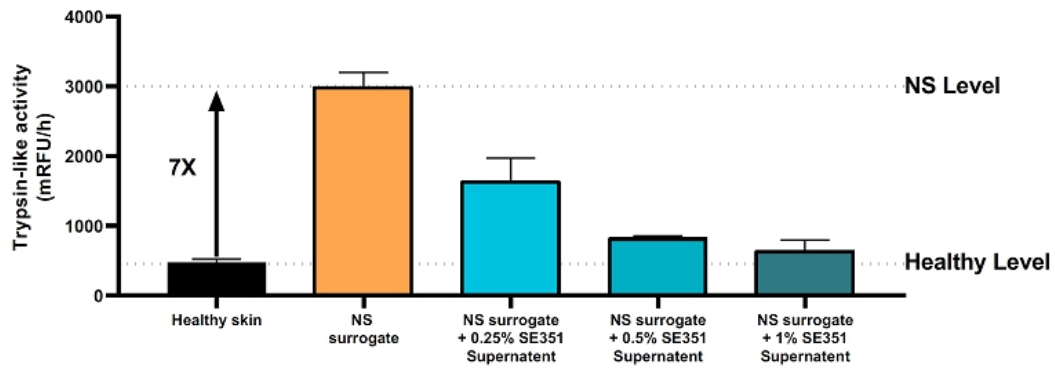
Engineering *S. epidermidis* into ATR-12 for Netherton syndrome

- 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



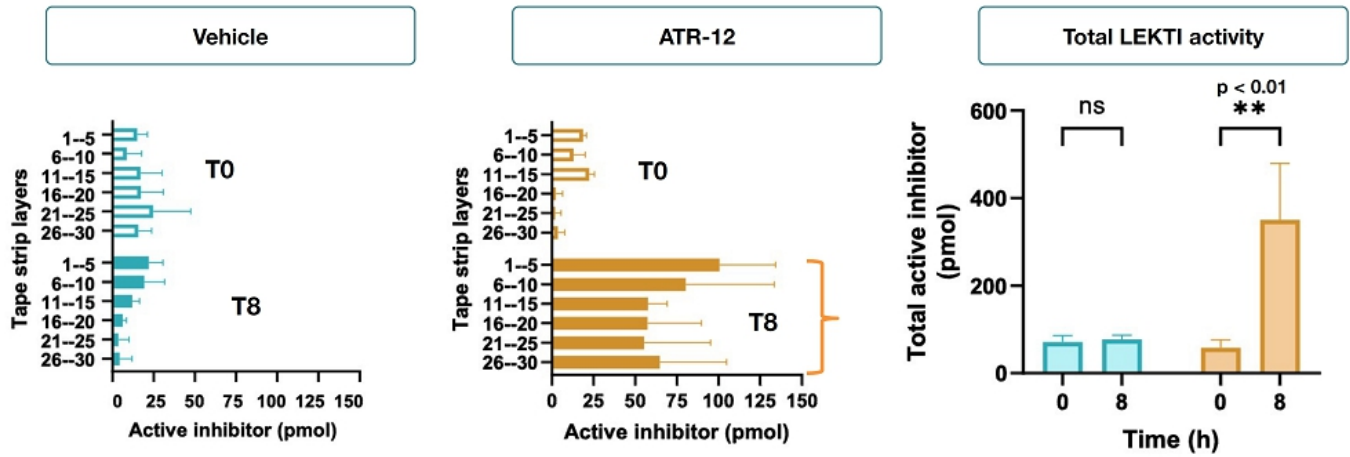
Ex vivo activity of ATR-12 shows decreased trypsin-like activity

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



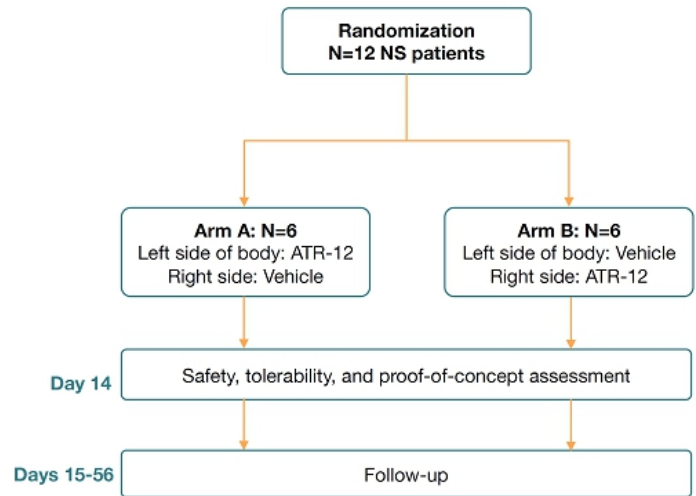
- ✓ LEKTI activity is significantly higher after 8 hours compared to T0 in all layers following ATR-12 application
- ✓ The LEKTI activity penetrates to at least 30 layers deep in substantial amounts

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

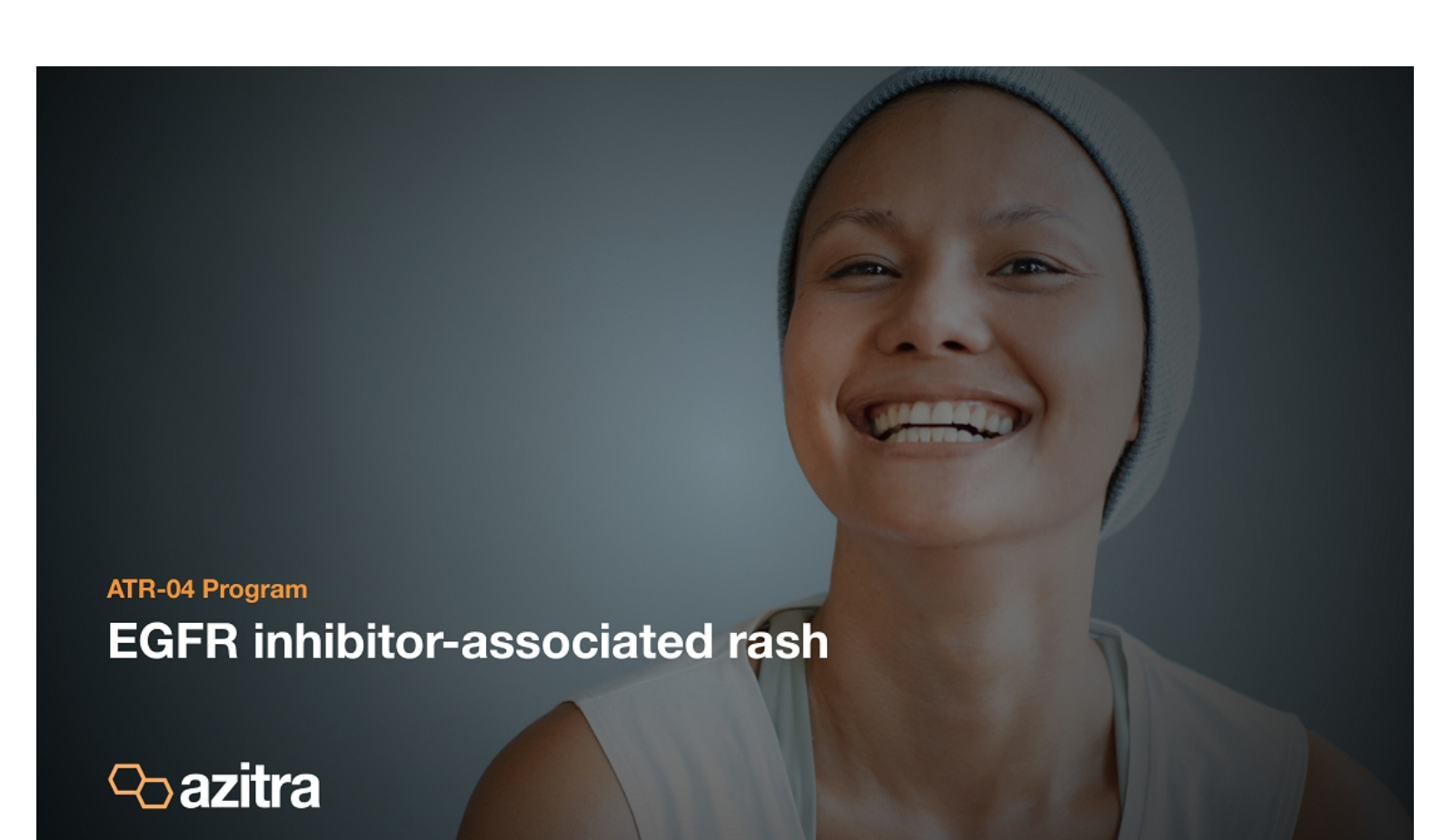
Design



ATR-12 is a differentiated approach for Netherton syndrome

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

¹ Under investigation for broader category of ichthyoses.



ATR-04 Program

EGFR inhibitor-associated rash

 azitra

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 2H 2023

**US Prevalence:**

>200,000 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**



Collaborations and Future Directions

 **azitra**

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

Broad spectrum of potential future applications

Medicines & Biopharmaceuticals



- Drug discovery
- Antibody production
- Vaccine innovation
- mRNA vaccines

Biofuels and Sustainable Energies



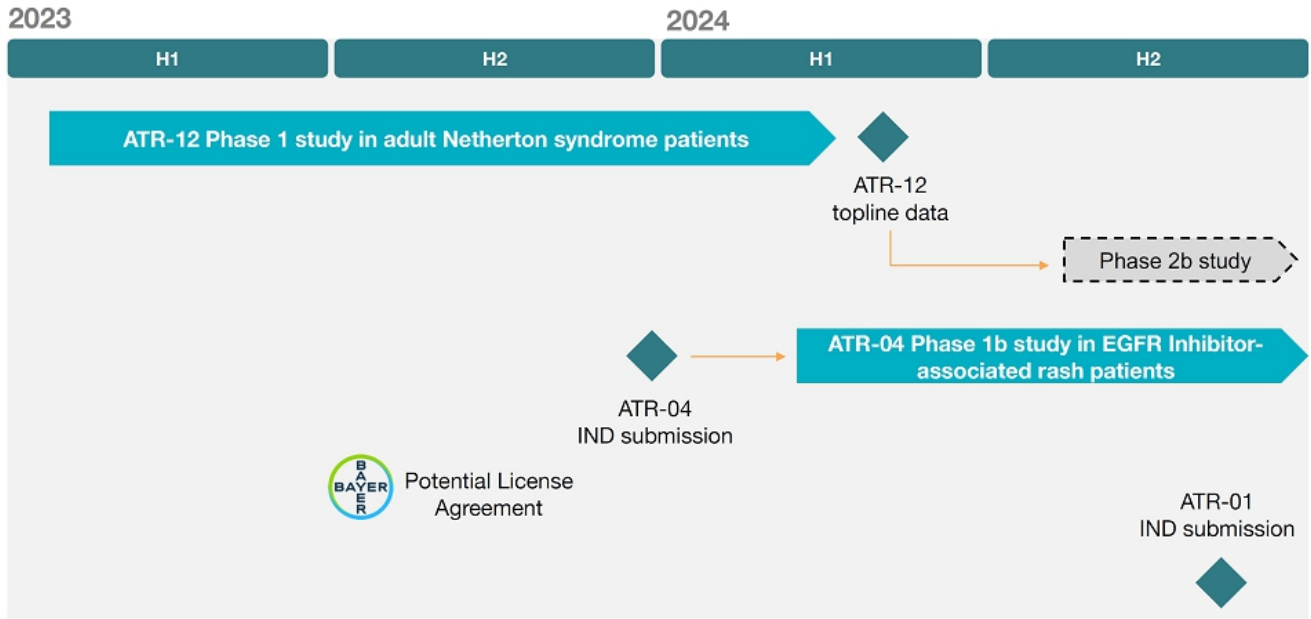
- Fermentation processes
- Ethanol made by thermophilic organisms
- Biodiesel from yeast cultured on sugarcane

Environmental Bioremediation















- Biodegradation of methylphenols
- Biosensors alerting for toxic substances
- Microbes to clean up chemical waste

ATR-12 and ATR-04 bring value-creating milestones in 2023-2024



Robust intellectual property with key patents issued

| | | | |
|---|---|---|---|
|  <p>2038 Treating skin disease with recombinant organisms</p> |  <p>2038 Treatment of skin disease with recombinant commensal skin microorganisms</p> |  <p>2038 <i>*Auxotrophic strains of Staphylococcus bacteria</i> <i>*Issued</i></p> |  <p>2038 Filaggrin subunits for treatment of eczema and ichthyosis vulgaris</p> |
|  <p>2039 LEKTI for Pruritis, Pain, Inflammation</p> |  <p>Formulations for stabilizing microbiome products</p> |  <p>2034 <i>*Treating atopic dermatitis with recombinant organisms</i> <i>*Issued</i></p> |  <p>2038 Treating inflammatory skin disease with recombinant organisms</p> |
|  <p>2038 Commensal bacteria to treat cancer associated rash</p> |  <p>2038 Cosmetic compositions with engineered bacteria</p> |  <p>2038 Treatment of Netherton syndrome with LEKTI expressing microbes</p> |  <p>2039 LEKTI for treating skin cancer</p> |

Capitalization table

| | Pro Forma Pre-Offering |
|--|------------------------|
| Common Shares* | 10,557,134 |
| Warrants (WAEP: \$1.33) | 275,210 |
| Options (WAEP: \$4.23) | 1,290,319 |
| Fully Diluted Shares Outstanding: | 12,122,662 |

*Including the full conversion of \$4.35MM in Notes and \$35.7MM in Preferred Stock upon the offering into 9,513,143 common shares.

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



THANK YOU

Precision dermatology powered by synthetic biology.