



## ASX Announcement

25 March 2021

### R&D Webinar on Today at 11 am

MELBOURNE, AUSTRALIA (25 March 2021): Hexima Limited (ASX:HXL) a clinical stage biotechnology company developing HXP124, a new prescription treatment for onychomycosis, is holding an R&D Webinar today at 11 am. This webinar is an opportunity to hear the fascinating story of how the scientific data Hexima has generated on HXP124 in the laboratory is now playing out in the real world as it conducts advanced clinical trials on HXP124 as a potential new topical treatment for onychomycosis. A copy of the presentation is appended to this announcement.

Attendees can register to attend the webinar using the link below.

[https://zoom.us/webinar/register/WN\\_MN-oT3ELRle\\_oOLtdBcuqw](https://zoom.us/webinar/register/WN_MN-oT3ELRle_oOLtdBcuqw)

Hexima COO  
Nicole van der Weerden

Hexima CEO  
Michael Aldridge

Hexima CDO  
Peter Welburn

[Register Now](#)

**R&D Webinar** | 25 March 2021 | 11am AEDT

#### About Hexima

Hexima (ASX:HXL) is an anti-infectives focused, clinical stage, biotechnology company engaged in the research and development of plant-derived defensin peptides for applications as human therapeutics. Its lead product candidate, HXP124 applied in a topical formulation, is a potential new prescription treatment for toenail fungal infections (or onychomycosis). Hexima is currently conducting an Australian phase IIb clinical trial of HXP124 in onychomycosis. Hexima holds granted, long-life patents protecting HXP124 and other anti-fungal molecules in major markets globally. For additional information about Hexima please visit [www.hexima.com.au](http://www.hexima.com.au).

**This announcement is authorised for release to ASX by Michael Aldridge, CEO and Managing Director.**



***Enquiries:***

Dr Nicole van der Weerden

Chief Operating Officer

[n.vanderweerden@hexima.com.au](mailto:n.vanderweerden@hexima.com.au)

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# Hexima Limited (ASX:HXL)

## R&D Webinar

25 March 2021  
11:00 am

# Disclaimer



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## Summary information

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## Financial data

All dollar values are in Australian dollars (A\$) unless stated otherwise.

## Performance

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# Hexima Limited (ASX:HXL)

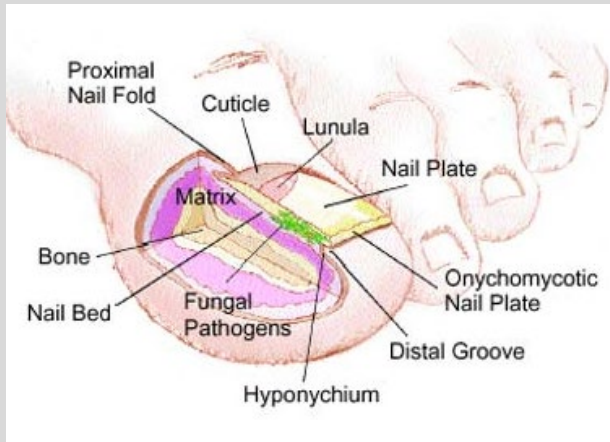
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- **Australian anti-infectives focused clinical stage biopharmaceutical company**
  - Lead program is HXP124, a potential new topical treatment for onychomycosis
  - HXP124 is a patented biologic with a novel fungicidal mode of action
  - Also exploring other applications for anti-fungal peptide platform
- **Onychomycosis (fungal nail infection) represents a large and growing market with substantial unmet need**
  - Estimated to affect ~14% of the population, **globally the market for treatments of onychomycosis estimated at US\$3.7 bn.**
  - Significant unmet need: Topical drugs - long course of treatment, limited efficacy. Oral drugs - more effective but risk of toxic side effects
- **Lead product: HXP124 is a potentially game-changing treatment**
  - Demonstrated in a phase I/IIa clinical trial to have a favourable safety profile and deliver effective and rapid antifungal treatment
    - **Safe and well tolerated**
    - **High efficacy** via consumer-friendly topical application
    - **Short, convenient course of therapy**, delivers rapid visual resolution of disease
  - Currently in phase IIb clinical trial for onychomycosis
- **Experienced management with a track record of delivering value**
- **HXP124 represents a compelling commercial opportunity in a global consumer driven market**
  - **Patients and clinicians have a clear preference** for a safe topical product with a more convenient shorter course of therapy and better efficacy
  - HXP124 addresses a clear unmet need and promises to be the **treatment of choice for this large and unsatisfied market**



# Onychomycosis (fungal nail infection)

## Pathophysiology



Dermatophytes (fungi that cause skin disease) typically enter through the distal groove at the end of the nail and proliferate in the nail bed.

## Key Insights



**Onychomycosis of the toenail is estimated to affect up to 14% of the population**, growth in the market is primarily driven by an ageing population



**Risk factors include increasing age, athlete's foot, diabetes, and immunodeficiency.**



**Patients experience pain, discomfort and difficulty wearing shoes.** Quality of life is affected by nail dystrophy and unacceptable cosmetic appearance



**23 million patients in US, only ~35% seek treatment.** Large potential for growth with an attractive product which meets a consumer driven need

# Shortcomings of current treatments





# The Hexima solution

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- HXP124 has potential to deliver the preferred solution in a consumer-driven market



**Safe**, topical medication



**Convenient**, short course of therapy



**Effective**, best-in-class mycological cure

# Effective topical treatment of onychomycosis requires three drug properties



1. **Efficient penetration** of the nail to reach the fungus in the nail bed, the main site of infection



2. **Efficient killing** of the fungal pathogens that cause onychomycosis

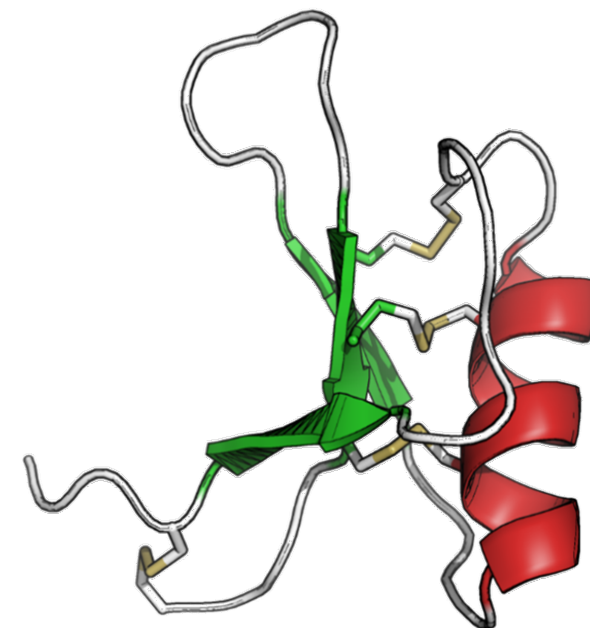


3. **Antifungal activity in the presence of keratin**, the major component of the nail and nail bed

# HXP124 is a peptide isolated from plants that has evolved to specifically kill fungal pathogens



The unique properties of HXP124 enable safe penetration of the nail and clearing of the infection

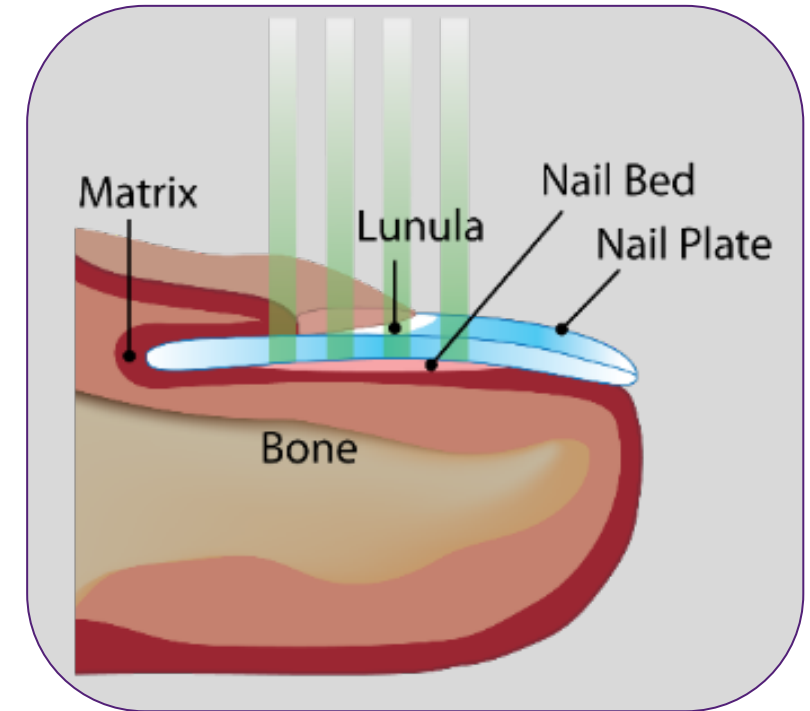




# The nail is a major barrier to current antifungal drugs



- Topical treatments for fungal nail disease must penetrate human nails to reach the nail bed, the main site of infection
- Current topical antifungal drugs are hydrophobic and do not easily pass through the nail
- HXP124 is hydrophilic and does not stick to keratin so it passes through the nail very efficiently

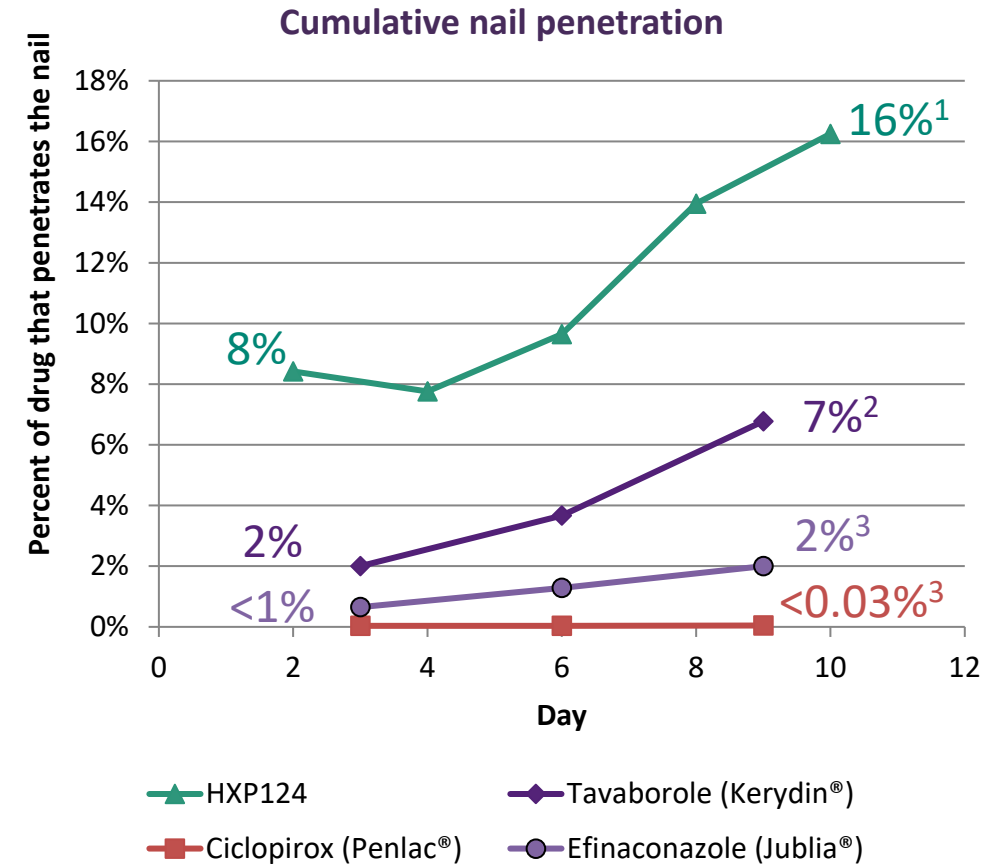
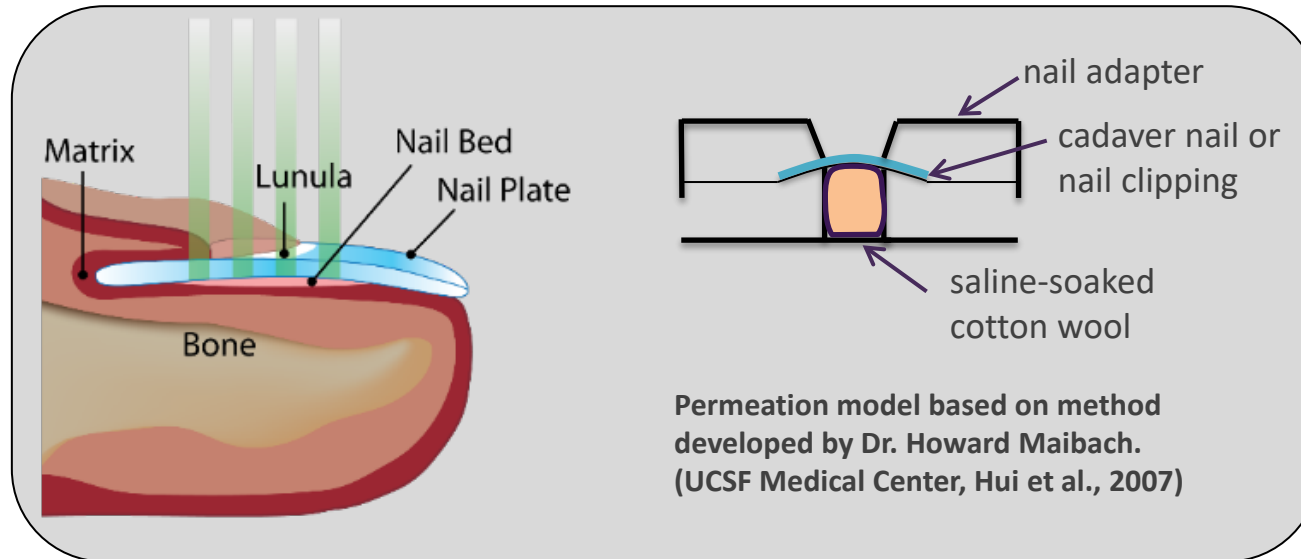




# HXP124 penetrates nails faster and more efficiently than current marketed products



- Nail penetration can be assessed using an *in vitro* nail adapter

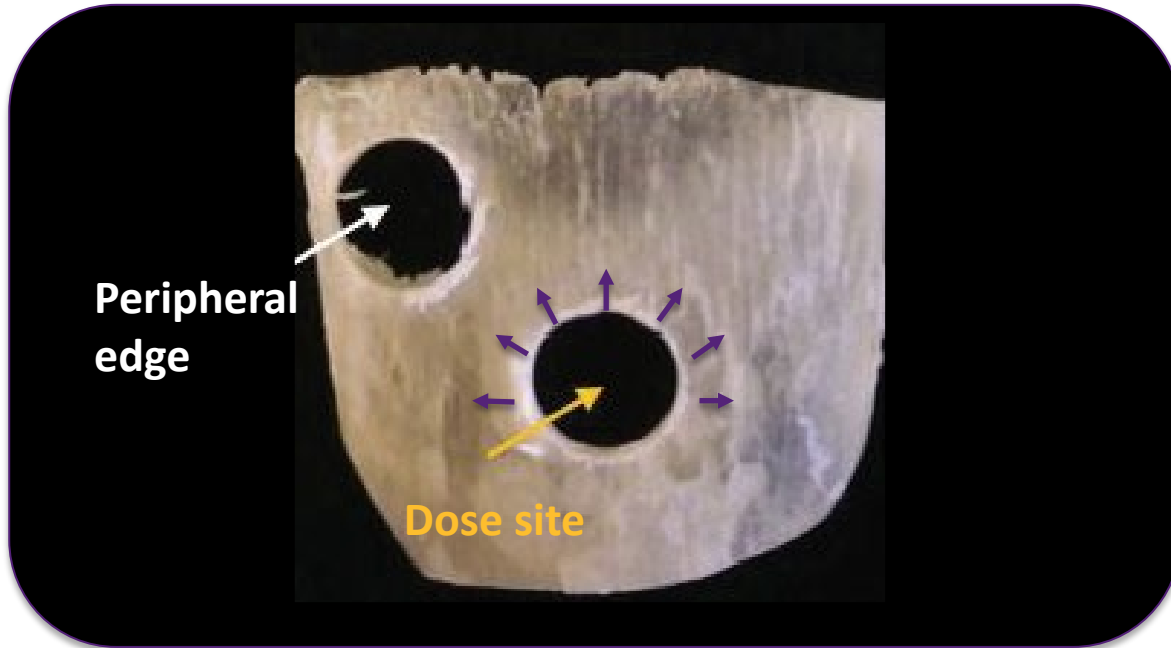




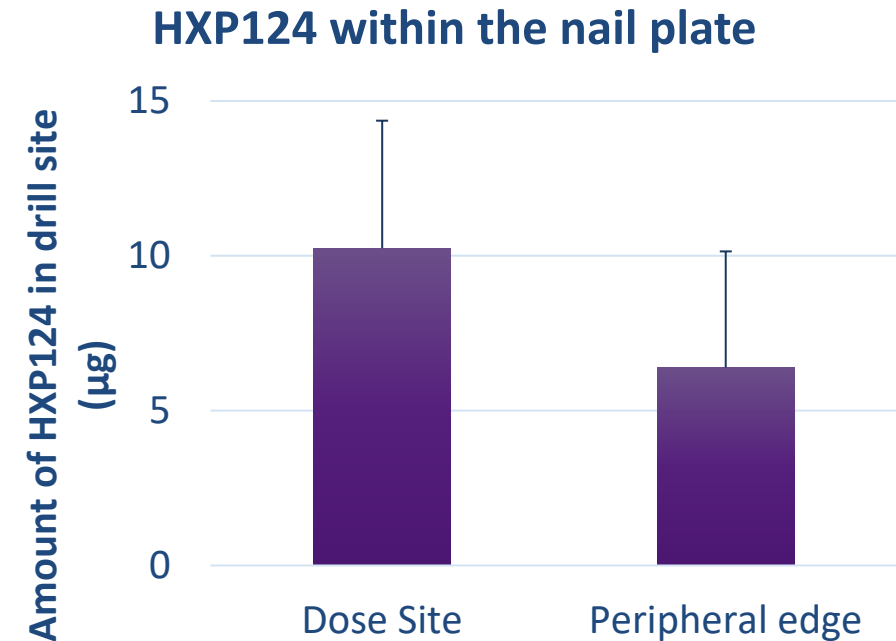
# HXP124 diffuses throughout the nail plate



- HXP124 accumulates in human nails at the site of application to levels that kill fungus
- HXP124 diffuses sideways to areas that are not dosed



Human nails dosed with HXP124 in nail penetration assays were drilled to collect nail material from the dose site (yellow arrow) and the edge of the nail (white arrow) and the amount of HXP124 present at each site was analysed

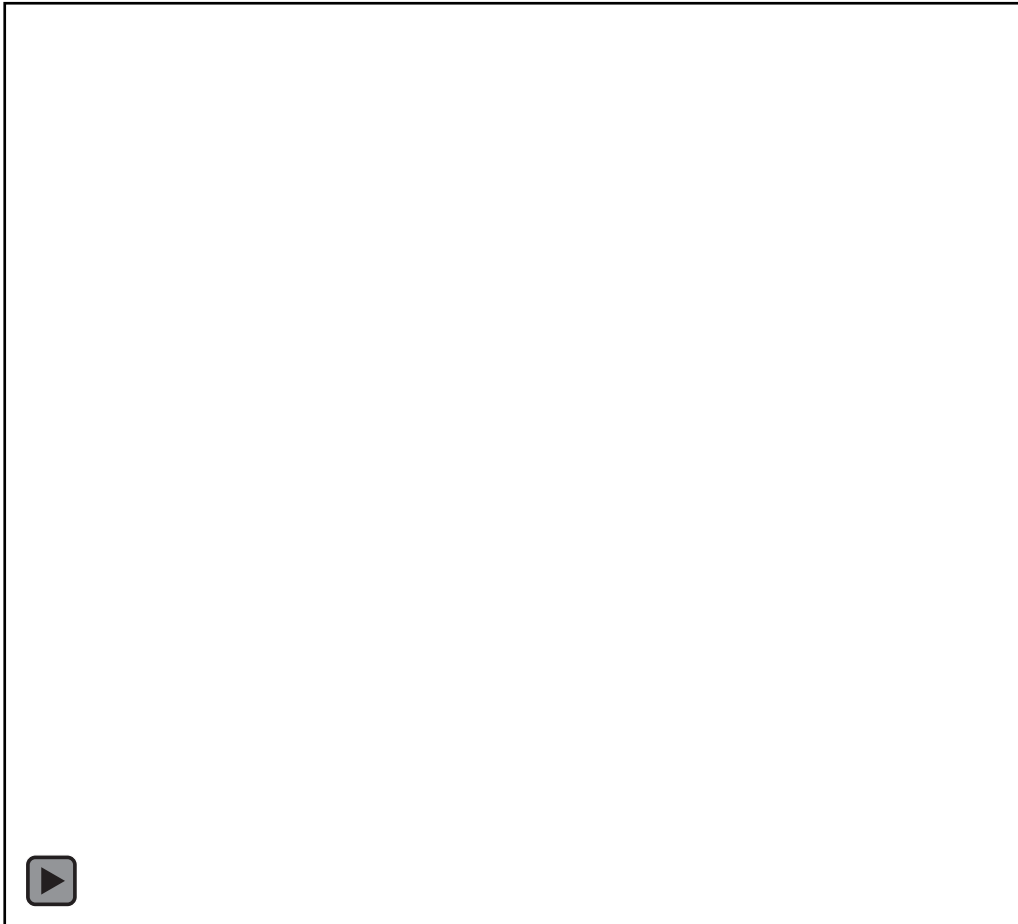


Internal Hexima data



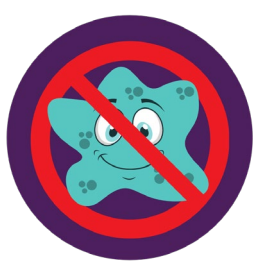
# HXP124 is a new class of antifungal drug with a novel mode of action

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- HXP124 binds to the fungal cell surface before entering cells and causing membrane disruption

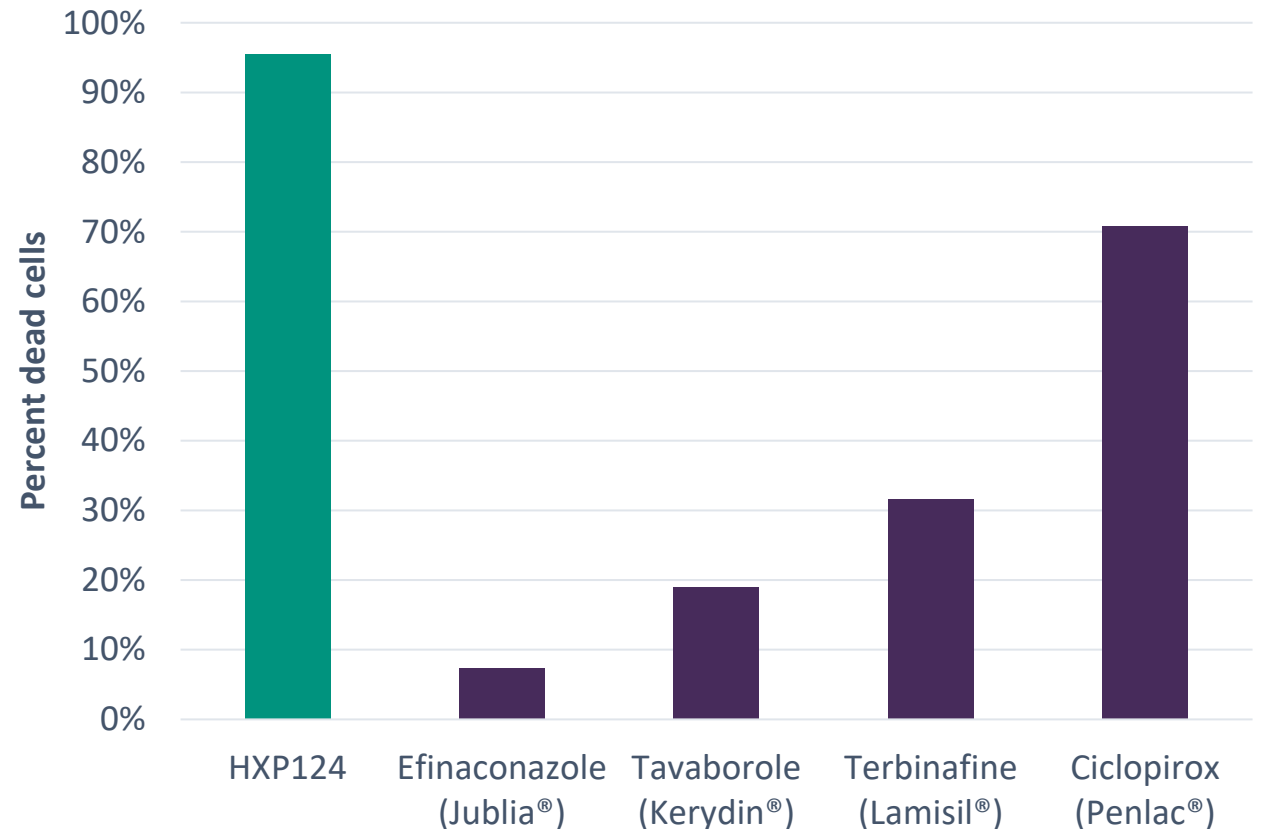
*Candida albicans* cells treated with FAM-labelled HXP124 in the presence of PI (stains nucleic acids).



# HXP124 kills fungi more readily than other treatments for nail infections



- HXP124 kills fungal cells within 30 minutes
  - Ineffective killing by drugs currently on the market means the fungus can regrow when the drug is no longer present
- HXP124 is specific for fungal cells and does not impact the viability of human or bacterial cells



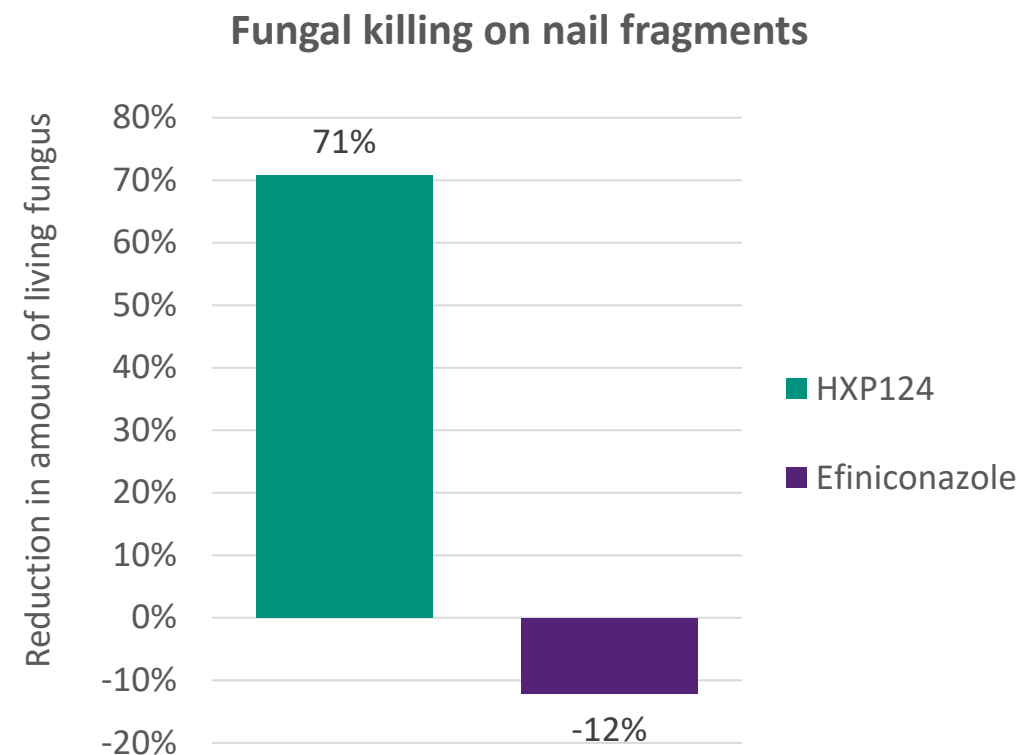
Fluorescence Associated Cell Sorting (FACS) of Propidium Iodide stained cells was used to identify living and dead *Candida albicans* cells after 30 min treatment with antifungal agents



# HXP124 kills fungus on nail fragments more efficiently than leading topical product



- *T. rubrum* grows on nail fragments with no other source of nutrients
  - mimics natural infection
- HXP124 kills *T. rubrum* growing on nail fragments much more efficiently than efinaconazole



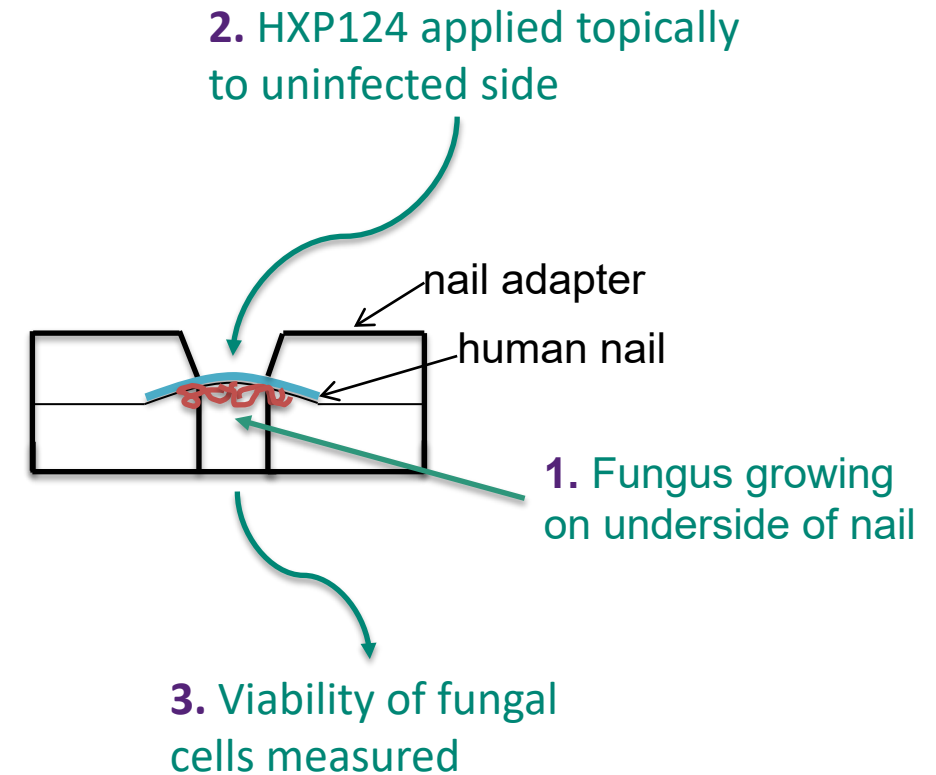
Internal Hexima data



# The Infected Nail Model measures antifungal activity after nail penetration



- One industry standard test for nail penetration is the Infected Nail Model by MedPharm (UK)
- MedPharm tested HXP124 in its Infected Nail Model to confirm that HXP124 passes through human nails to kill fungal cells
- Efinaconazole 10% and Ciclopirox 8% were used as comparator products in this study
  - Efinaconazole 10% soln is the best available topical product



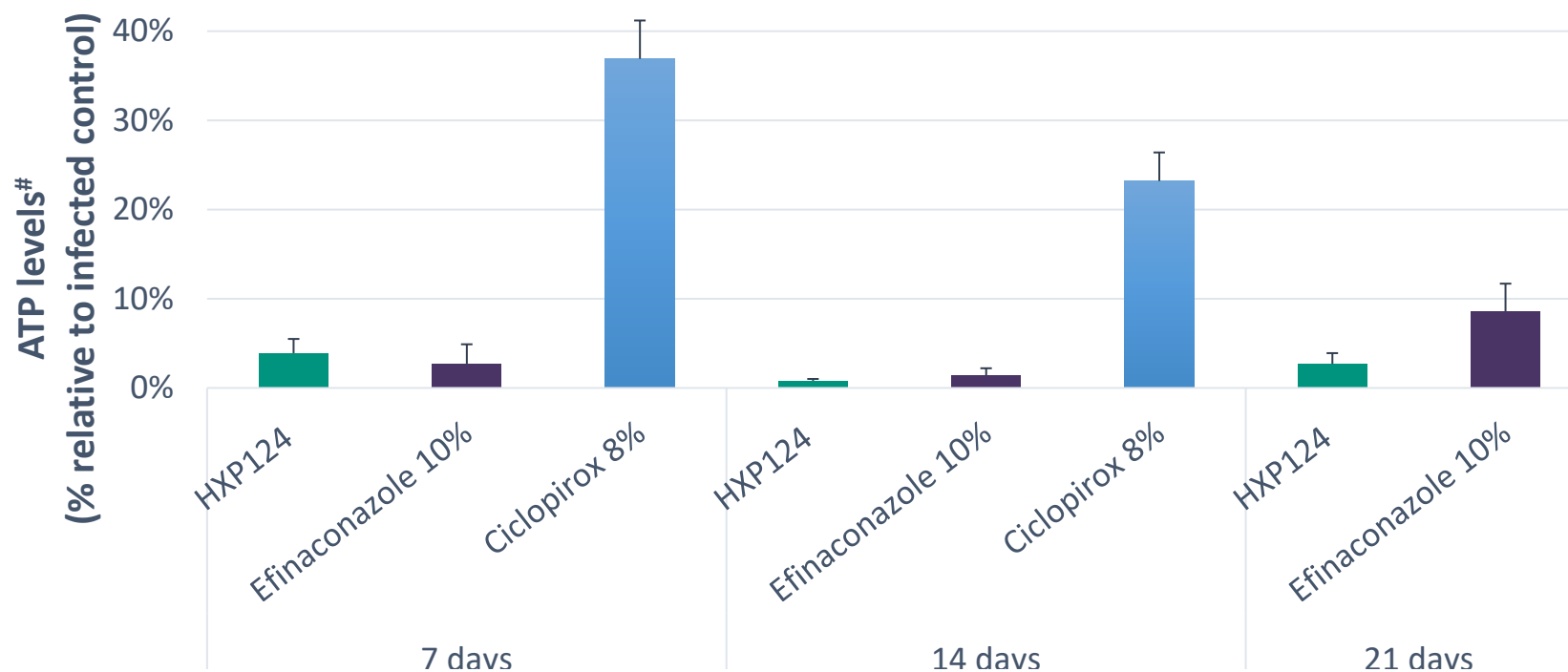
An infected nail is clamped into a device. A test molecule is active if it passes from the top side of the nail to the underside and kills the fungus.



# HXP124 is effective in the Infected Nail Model



- HXP124 killed over 95% of fungal cells within 7 days and was as efficient as efinaconazole 10%
- HXP124 was still active after transit through the nail
- HXP124 was more effective than efinaconazole 10% soln after 21 days\*

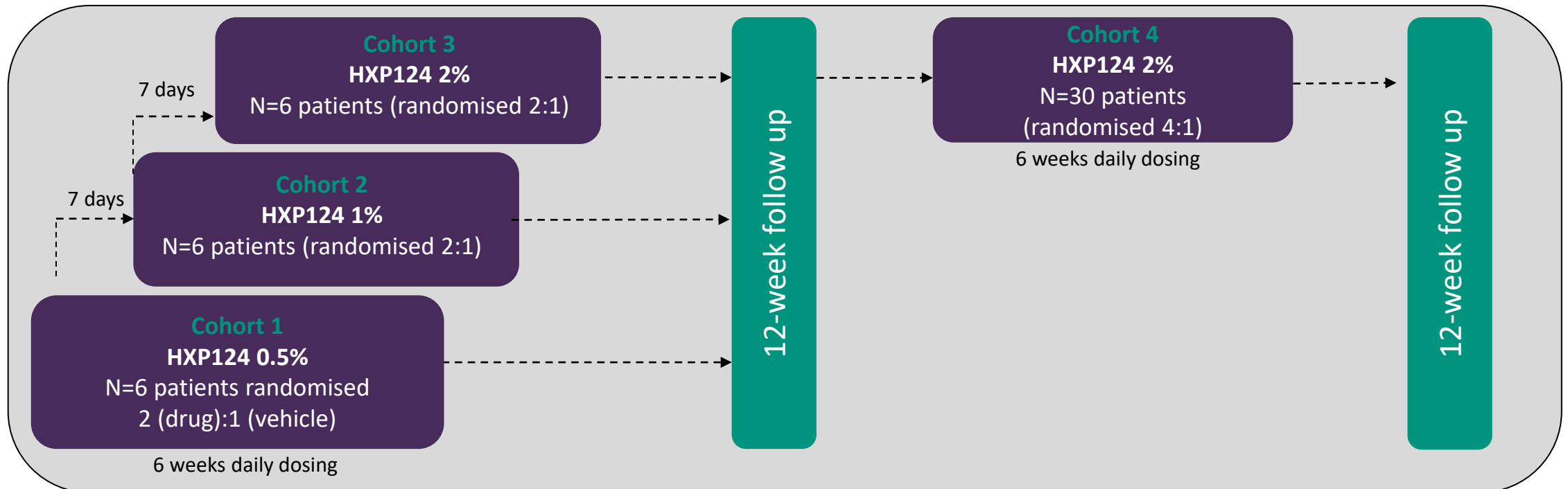


# Phase I/IIa clinical trail



# Overview

- Randomised, double blind, vehicle-controlled, ascending dose cohort study
- Patients treated nails daily with HXP124 (or vehicle) for 6 weeks with follow-up at 12 weeks
  - Total of 48 patients – 36 treated with HXP124, 12 treated with vehicle

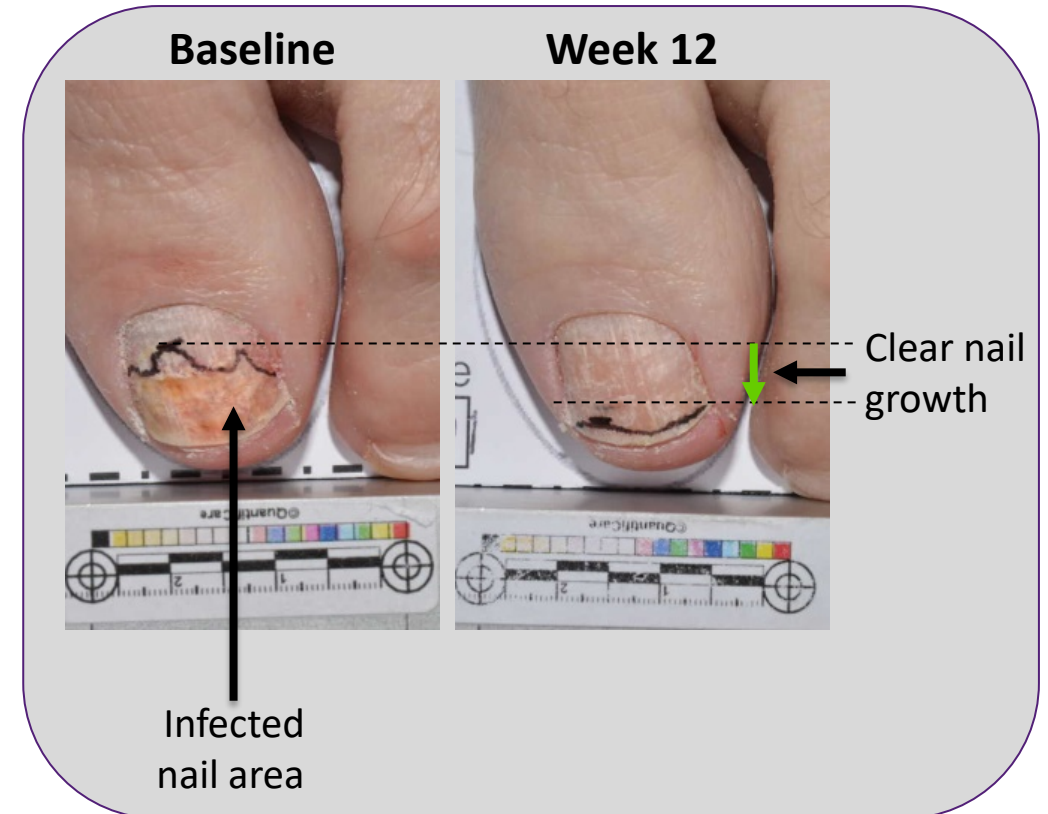


ANZCTR registration number: [ACTRN12618000131257](https://www.anzctr.org.au/Trial/Registration/TrialRegistration.aspx?ACTRN12618000131257)



# Phase I/IIa clinical trial endpoints

- Primary endpoint
  - Safety and tolerability
- Secondary endpoints
  - Preliminary efficacy data
    - Clear Nail Growth and Reduction in Infected Nail Area
      - Assessed by photographs
    - Mycological cure
      - Clearance of fungi from the nail as assessed by microscopy and culture



# Safe and well tolerated



The primary endpoint for the phase I/IIa study was safety and tolerability



HXP124 is **safe and well tolerated** when applied daily for 6 weeks.  
No drug-related adverse events.



HXP124 **did not cause local redness or irritation** and was not detected in the bloodstream.  
**No systemic toxicity.**

# Effective and rapid anti-fungal activity



## Key Insights from Phase I/IIa clinical trial

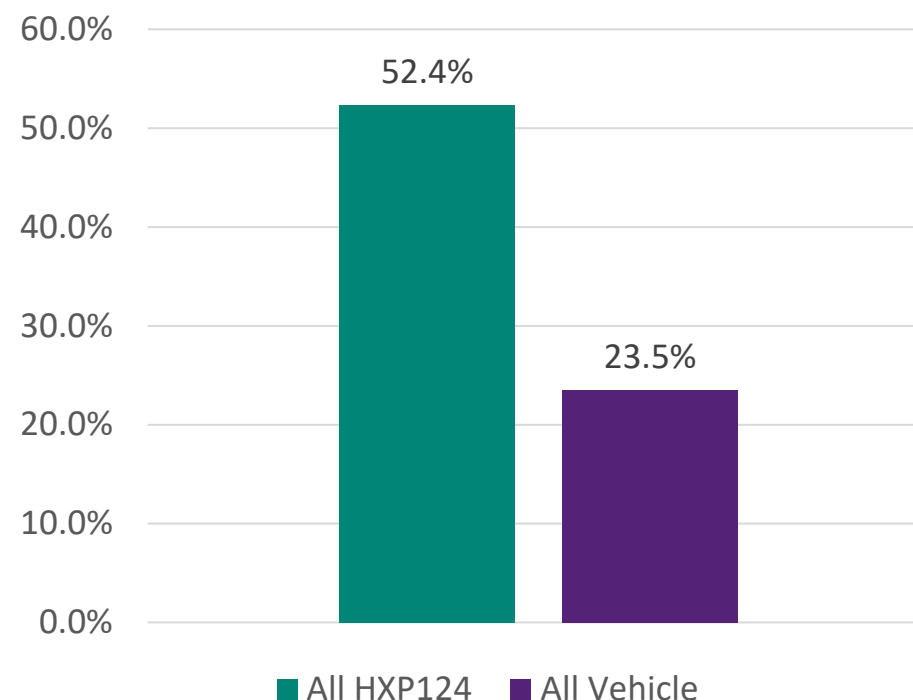


**Mycological cure\*** was achieved in **52% of HXP124-treated nails** within 12 weeks (vehicle 24%)



**Mycological Cure\*** rate at 12 weeks, ~2-fold higher than current treatments, after only 6 weeks of daily treatment

Mycological Cure at 12 weeks



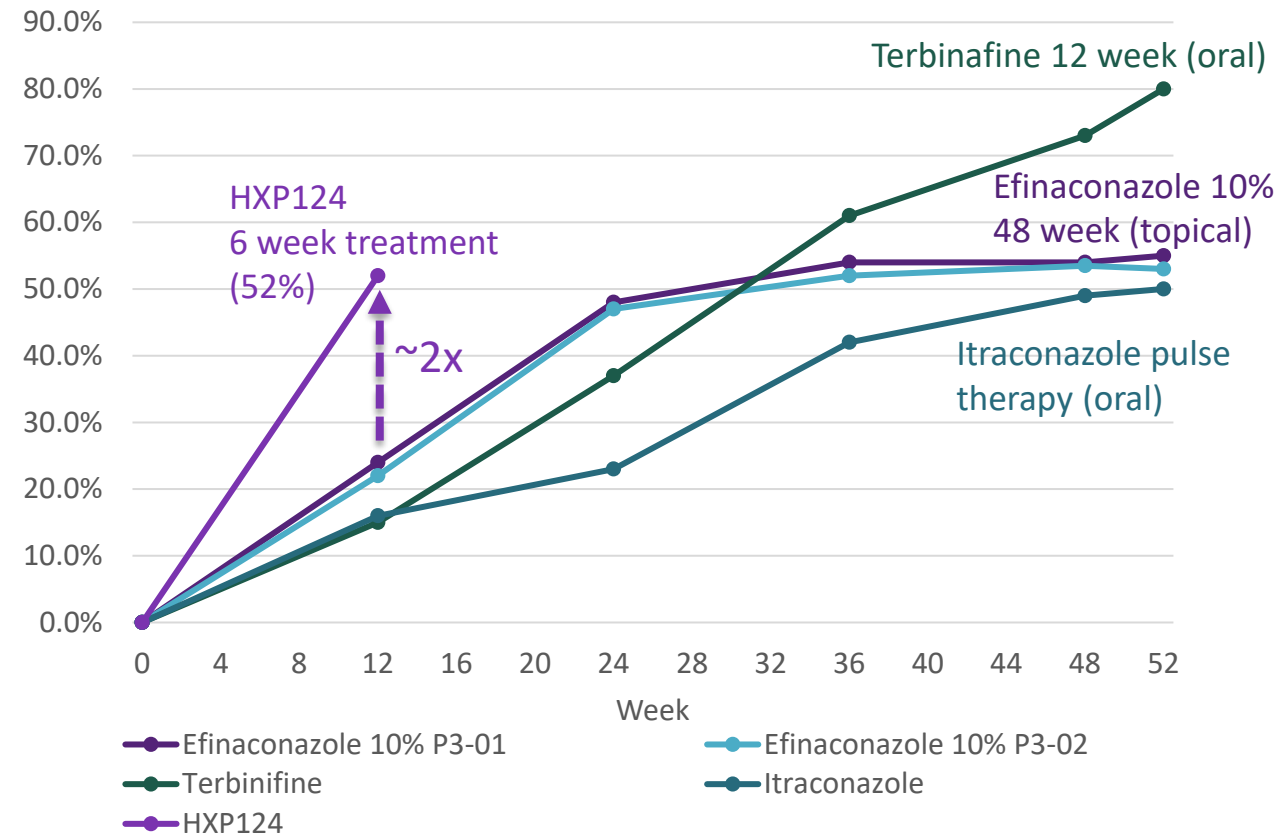
\*Mycological Cure = clearance of fungi from the nail as assessed by microscopy and culture

# HXP124 delivered effective and rapid antifungal treatment for patients



**HXP124's Mycological Cure\*** rate at 12 weeks was ~2-fold higher than current treatments, after only 6 weeks of treatment

**Mycological cure\* over time**



\*Mycological Cure = clearance of fungi from the nail as assessed by microscopy and culture; Efinaconazole FDA and PMDA reviews; Evans & Sigurgeirsson, BMJ, 1999

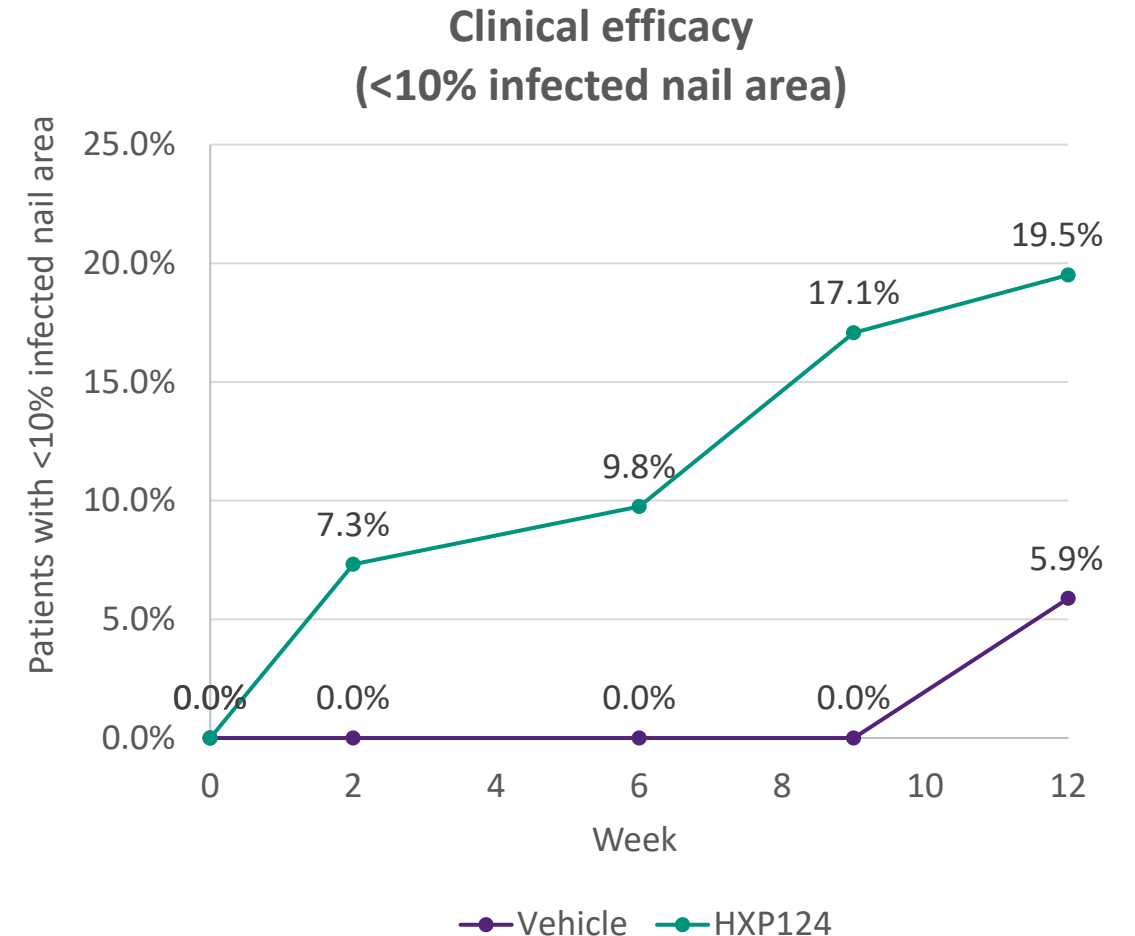
# HXP124 rapidly cleared the affected nail area



**HXP124 cleared the affected nail area** more effectively than formulation not containing HXP124



**Clinical efficacy was achieved in 20% of HXP124-treated nails** within just 12 weeks (vehicle 6%)



\*Clinical efficacy = <10% of the nail area infected.

# HXP124 dramatically improved the appearance of nails in just 12 weeks



**Baseline**

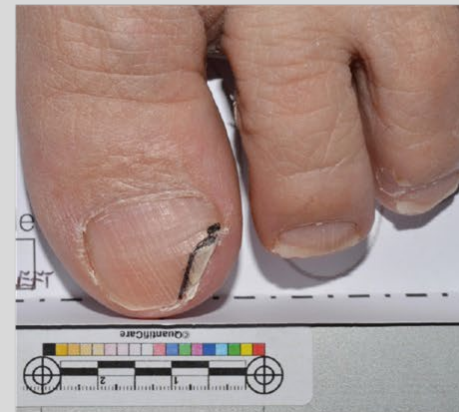


**12 weeks**

Prior to treatment



12 weeks after treatment commenced



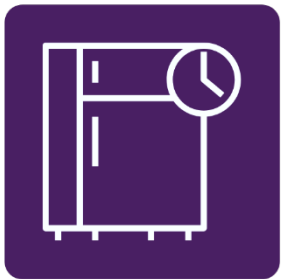
# HXP124 can be manufactured rapidly and economically



HXP124 is produced in a non-proprietary yeast expression system with a **highly competitive cost of goods**



HXP124 has been **manufactured to GMP** conditions. Commercial-scale contract manufacturer engaged, scale-up on-track



Drug product **retains activity when stored at room temperature for 24 months**



Images: Fermenter and Chromatographic purification at European CMO

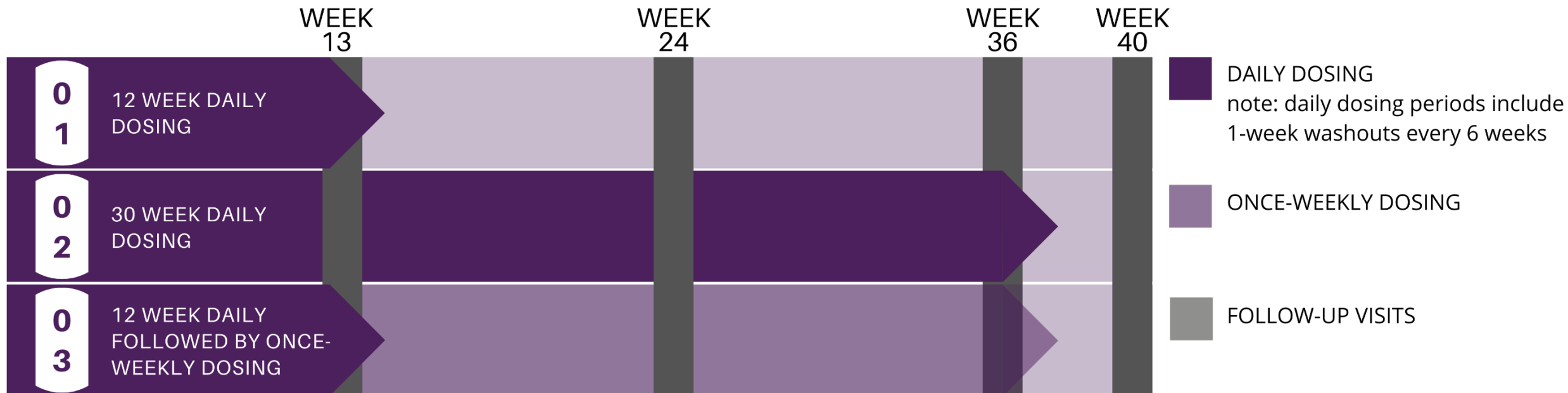
# Summary

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- The unique properties of HXP124 position it to become a **safe, convenient** and **effective** treatment for onychomycosis
  - Rapidly penetrates the nail plate to reach the site of infection
  - Potent, broad-spectrum & rapidly-fungicidal with a novel mode of killing
  - Active in the nail environment
  - Rapidly clears fungus from the nail and improves the appearance of nails
  - No reported local redness or irritation
  - Not detected in the bloodstream
  - Can be manufactured with a highly competitive cost of goods

# Australian Phase IIb clinical trial



- Three active arms versus vehicle (up to 132 subjects) to test optimal dosing strategy
- Safety & efficacy assessed at 13, 24, 36 and 40 weeks
  - aligned with efinaconazole 10% phase II study
- Multi-center, randomised, double blind, vehicle-controlled study
- Inclusion/exclusion criteria align with those used for efinaconazole 10% phase III study
- Results expected Q2 2022

# Scientific Advisory Board

# Hexima has formed a world-class Scientific Advisory Board

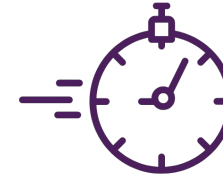
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- Internationally recognised expert clinical opinion leaders comprising Dermatologists and Podiatrists based in US, Australia and Japan
- Includes lead clinicians from late-stage clinical trials for multiple successful therapeutic products developed to treat onychomycosis
  - **Mark G. Lebwohl, MD** Mt. Sinai Hospital, New York, NY
  - **Boni Elizabeth Elewski, MD** The University of Alabama at Birmingham, Birmingham, AL
  - **Richard K. Scher, MD** Weill Cornell Medical Center, New York, NY
  - **Warren Joseph, DPM** Roxborough Memorial Hospital, Philadelphia, PA
  - **Tracey C. Vlahovic, DPM FFPM RCPS (Glasg)** Temple University School of Podiatric Medicine, Philadelphia, PA
  - **Phoebe Rich, MD** Oregon Dermatology and Research Center, Portland, OR
  - **Peter Foley, MD** Skin Health Institute, Melbourne, Australia
  - **Robert Rosen, MD** SouthDerm, Sydney, NSW
  - **Shinichi Watanabe, MD, PhD** Department of Dermatology, Teikyo University School of Medicine, Tokyo



# HXP124: a potential solution for a large and poorly served market



POORLY-SERVED, CONSUMER-DRIVEN MARKET	NEW AND UNIQUE	SAFE	CONVENIENT	EFFECTIVE
Affects ~14% of the population Strong consumer preference for topical products Clear unmet medical need	Novel molecule with unique mode of action Strong patent protection & long patent life	No systemic effects No local redness or irritation	Easy to apply Short treatment duration Rapid clearing of infected nail	Efficiently penetrates the nail Rapidly kills fungus Best-in-class mycological cure