Wintermute Biomedical

Solexan™: Pain Relief for Shingles Patients

SERIES A ROUND

INVESTOR PRESENTATION 2025

BACKGROUND

Developing Unique Antimicrobial Solutions to Infectious Diseases

Wintermute Biomedical Inc. is an R&D company creating innovative antimicrobial solutions for the prevention and treatment of infectious diseases.

2012

Wintermute Biomedical was founded to develop novel, non-toxic antimicrobials for infectious diseases using fatty acids.

2012–2017

Optimized the technology around the chemistry platform in which amino acids can be used to stabilize and solubilize antimicrobial fatty acids by forming micelles.

2018

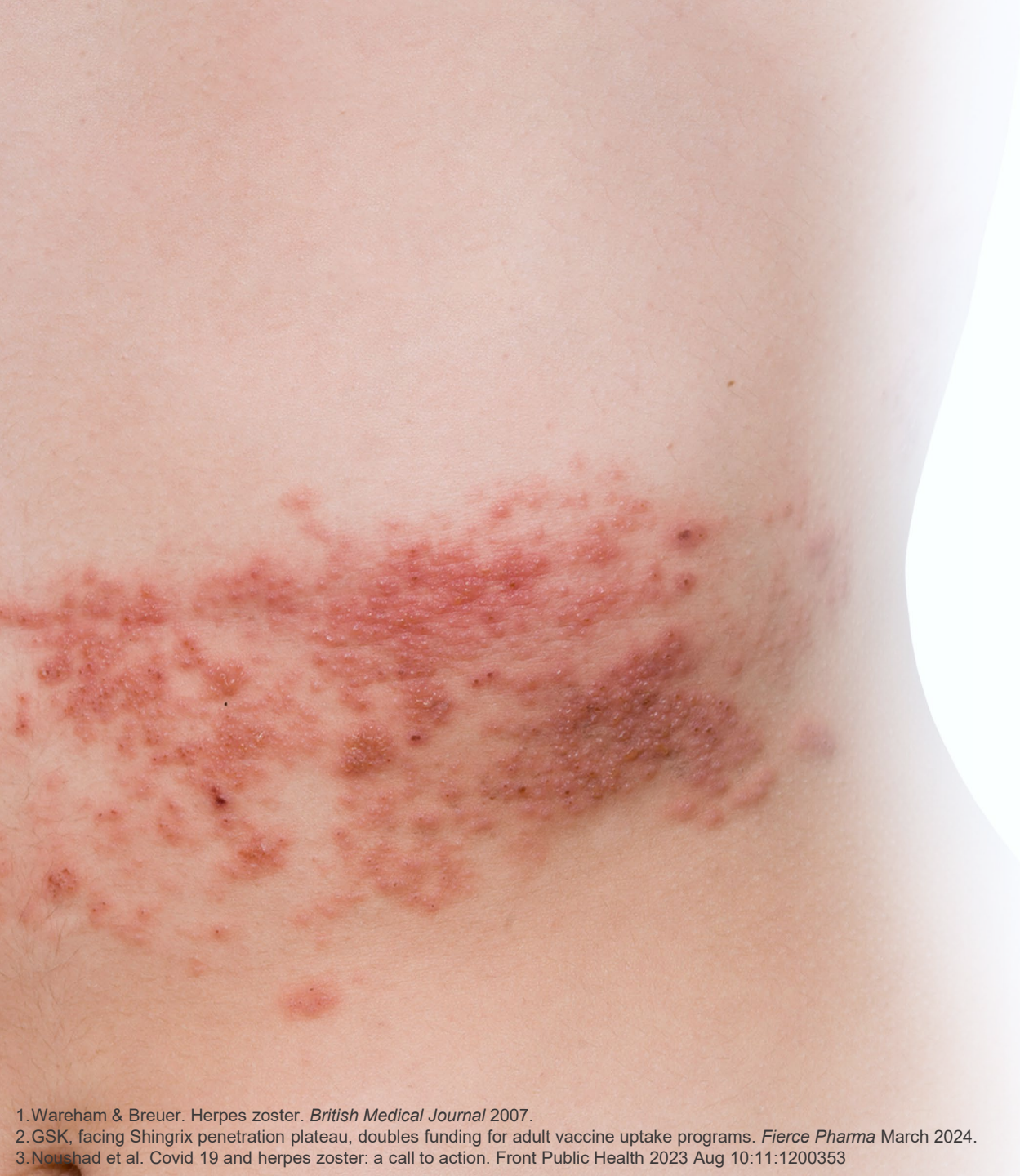
The compound library was expanded. Further microbial testing led to additional patent filings.

2021

Full patents were granted on the core technology. The **ZosterEase Clinical Program** was initiated to assess the clinical efficacy of **Solexan™** in treating shingles and shingles-induced pain.

2024

The **ZosterEase Phase Ib Trial** received ethics approval to assess safety and proof-of-concept efficacy of **Solexan™** in shingles patients.



Shingles: An Unmet Treatment Need

Caused by reactivation of the Varicella Zoster Virus (VZV).

A debilitatingly painful rash.

Globally, 1 in 3 people will develop shingles in their lifetime.

Up to 30%

Patients can experience long-term neuropathic pain associated with post-herpetic neuralgia (PHN) for years.

Oral Antivirals

- → Minimal impact on acute pain
- → Low efficacy if given after 72 h symptom onset[1]
- → Side effects and contraindications

Vaccines

- → Low uptake, 35% of eligible population[2]
- → Vaccine hesitancy and high cost
- → Side effects
- → Not recommended for adults under 50 years old[3]

"Shingles is a major health burden in the U.S. (1.3 million cases/year) and is equally prevalent in every region of the world. There is a great need for an effective treatment that will safely reduce the consequences of shingles."

- Prof Myron Levin, shingles expert

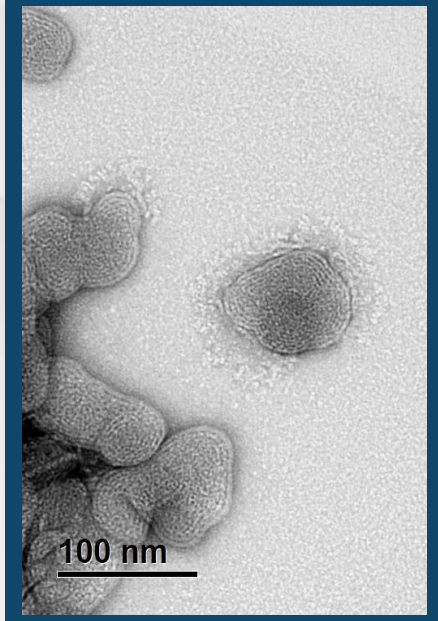
1. Wareham & Breuer. Herpes zoster. *British Medical Journal* 2007.
2. GSK, facing Shingrix penetration plateau, doubles funding for adult vaccine uptake programs. *Fierce Pharma* March 2024.
3. Noushad et al. Covid 19 and herpes zoster: a call to action. Front Public Health 2023 Aug 10:11:1200353

OUR WORLD-FIRST SOLUTION TO SHINGLES

Solexan™: An Adjunct Antiviral Solution for Shingles Pain Relief

Solexan™ (arginine undecylenate 15.7% w/w) is our first-in-class topical shingles treatment candidate.

Positioning Solexan™ as an adjunct to the standard of care for shingles.



CHEMICAL TECHNOLOGY

The antimicrobial fatty acid and amino acid in Solexan™ form an ammonium carboxylate salt in solution which is stable without the need for organic solvents. This salt spontaneously forms micelles (pictured) which are skin permeable and display potent activity against VZV.

Left: TEM image of Solexan™ micelles. La Trobe University, Melbourne Aus.

Benefits of Solexan™

1. A first-in-class topical treatment for shingles and shingles pain
2. Can be used in combination with standard of care
3. Well-established safety profile; only GRAS ingredients
4. Easily applied to the skin, dispersed, and absorbed
5. Cheap to manufacture and store; highly stable
6. Patented in the U.S. and Australia,* with patents pending in leading countries of the shingles treatment market

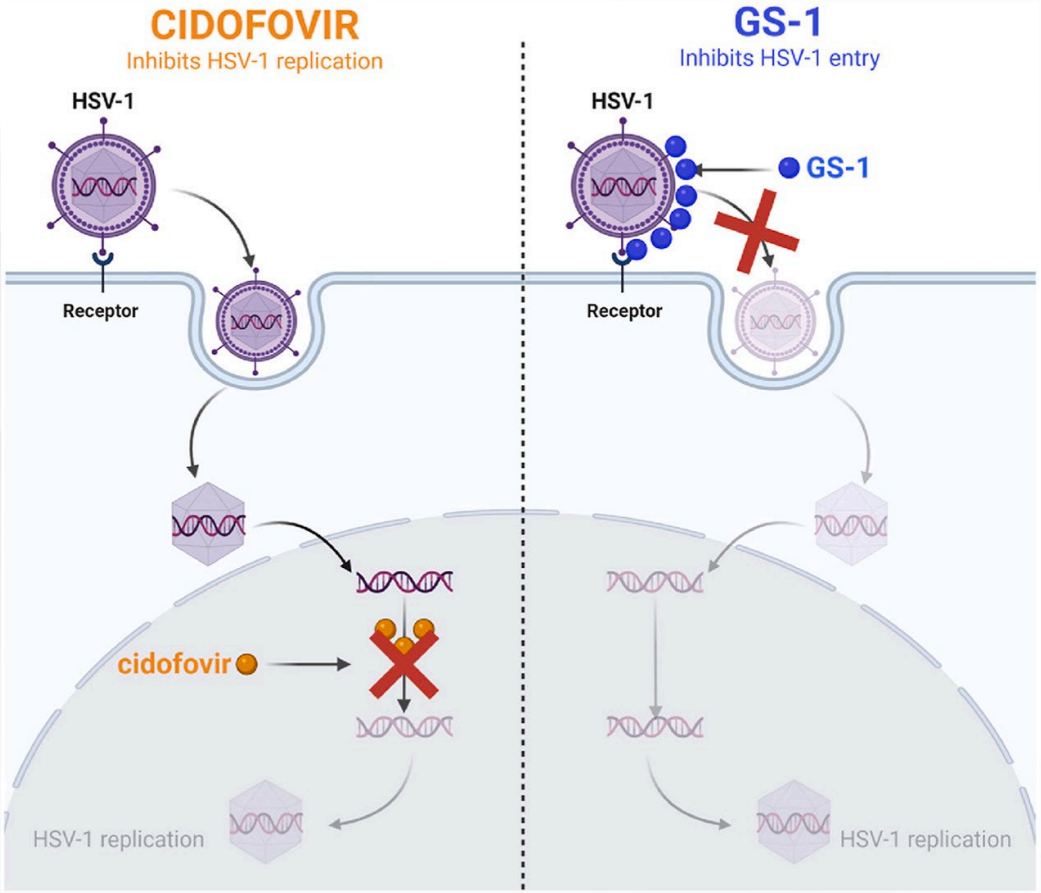
How Solexan™ aims to compare to existing shingles therapies

	Oral antivirals	Pain medication	**Solexan™**
Targets infection	✓	×	✓
Targets pain	×	✓	✓

*WO2020072479A1; US11065220B2; US11103475B2; AU2019355862A1.

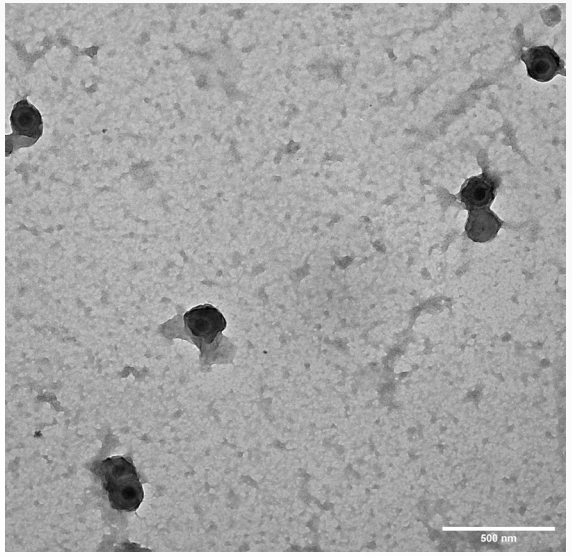
Solexan™: A Unique Antiviral Mechanism of Action

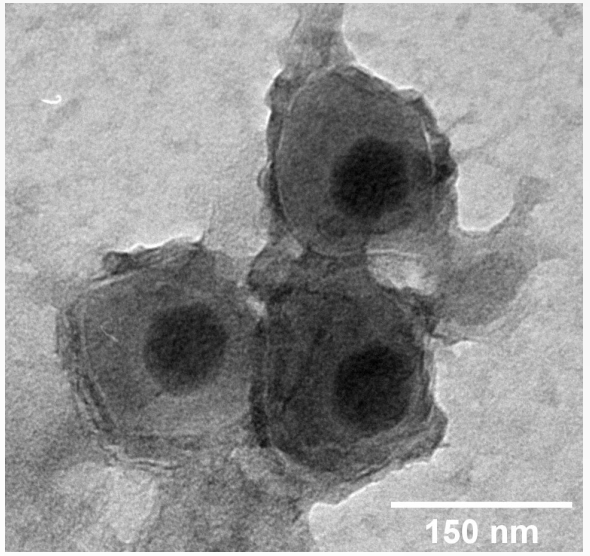
Solexan™ (GS-1) is a first-in-class viral entry inhibitor.



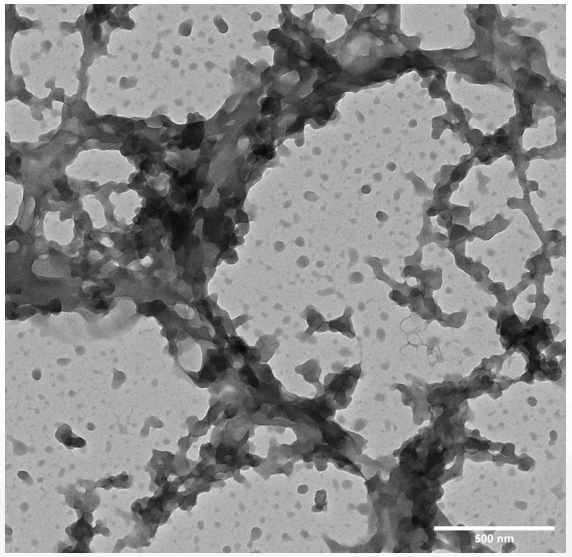
Unlike current shingles antivirals (e.g. cidofovir, acyclovir) that block DNA replication, Solexan™ directly binds to and blocks VZV from entering host cells.

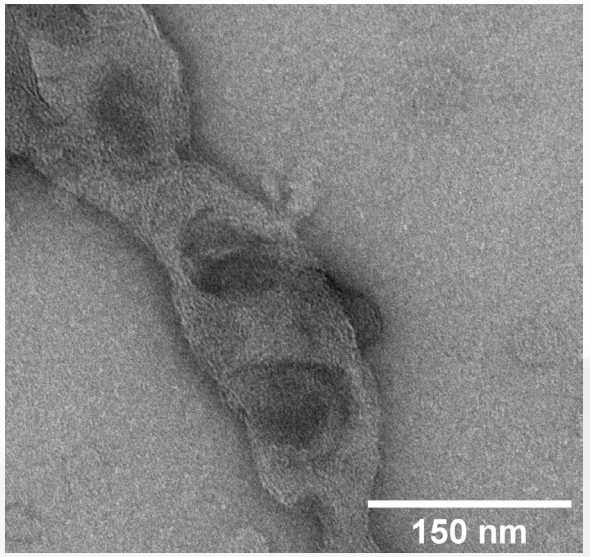
Virus Alone





Virus + Solexan™

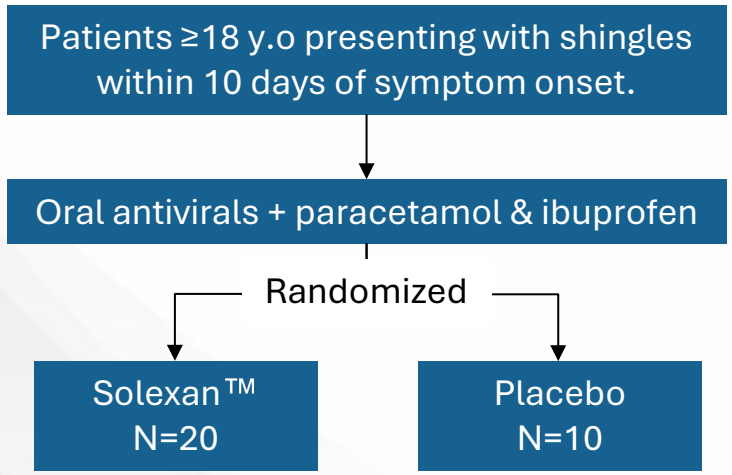




Monson *et al*. GS-1 blocks entry of herpes viruses and more broadly inhibits enveloped viruses. *Antiviral Research*. 2025. Vol. 237. These studies used HSV-1 as a model virus for VZV.

ZosterEase Phase Ib Trial with Solexan™ in Shingles Patients

A double-blind, randomized, placebo-controlled study to evaluate safety, tolerability, and proof-of-concept efficacy of topical Solexan™ in patients with shingles.



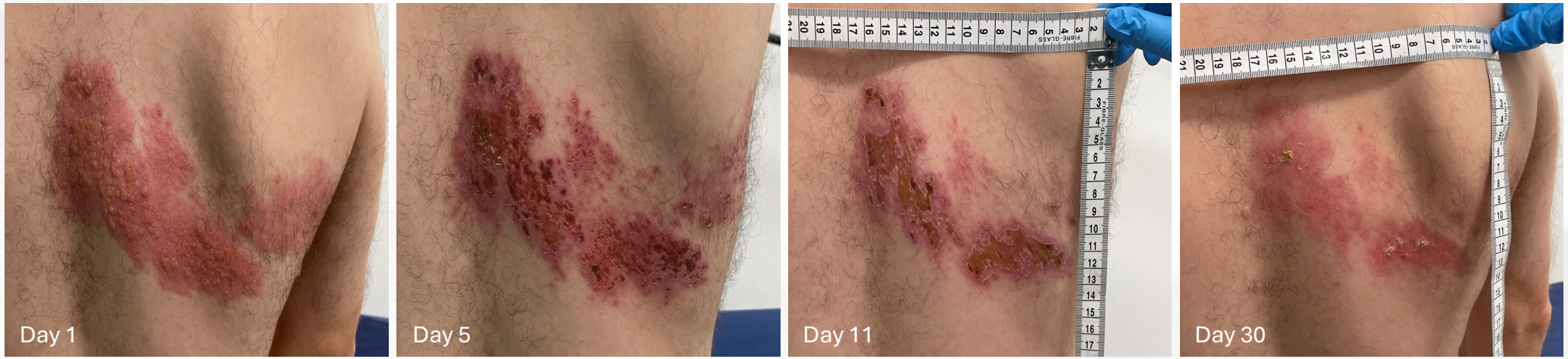
Primary Endpoint: Safety and tolerability

Secondary Endpoint: Proof-of-concept efficacy in reducing shingles pain using (shingles-validated pain questionnaire) and improving quality of life

- Solexan™ (15.7% w/w) topical foam, twice daily x 10 days, 30-Day follow-up
- All participants received oral antivirals

Prohibited Medications: Pain agents

- Opioids, steroidal anti-inflammatories, topical lidocaine, gabapentinoids, pregabalin, tricyclic antidepressants, and recreational drugs



Images of a participant in the ZosterEase Trial.

Indications of Pain Relief and Safety From Phase Ib Trial Results

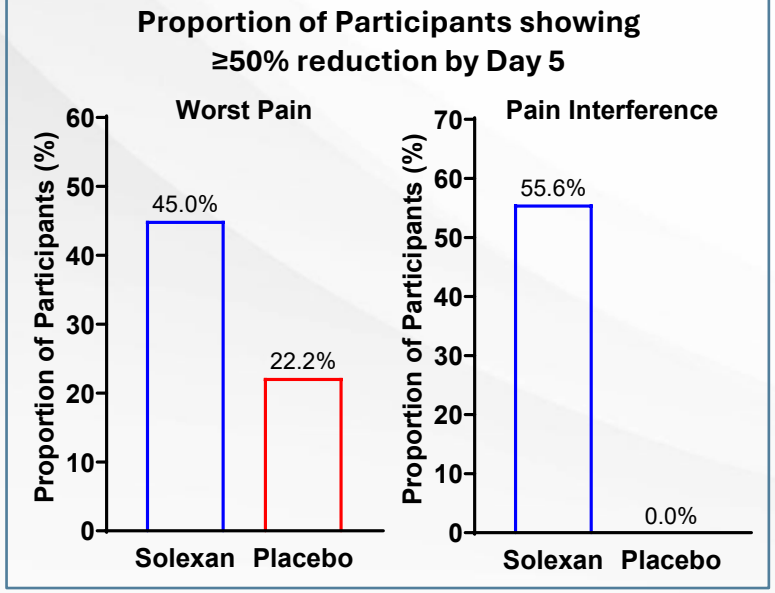
Safety and Tolerability
Solexan™ was safe and well tolerated, with no severe drug-related AEs. No participant discontinuations or withdrawals resulting from treatment.

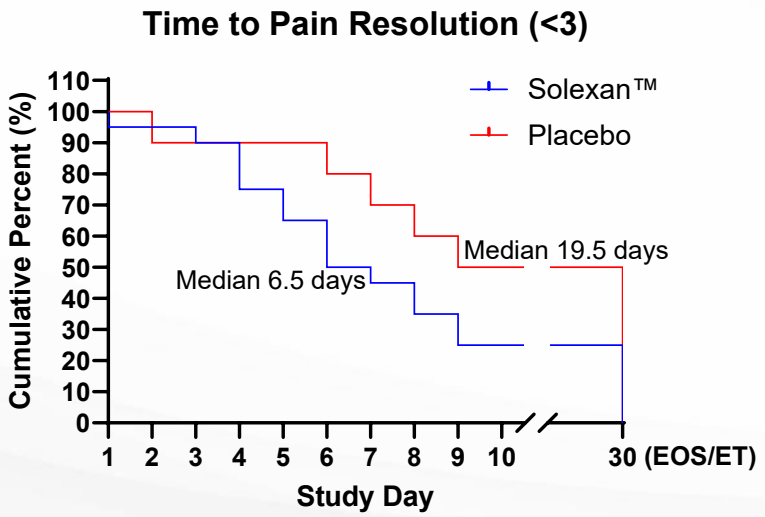
Greater Proportion of Responders
More participants in the Solexan™ group achieved meaningful relief (≥30% reduction) by Day 5 for both pain intensity and interference with daily life compared to placebo.

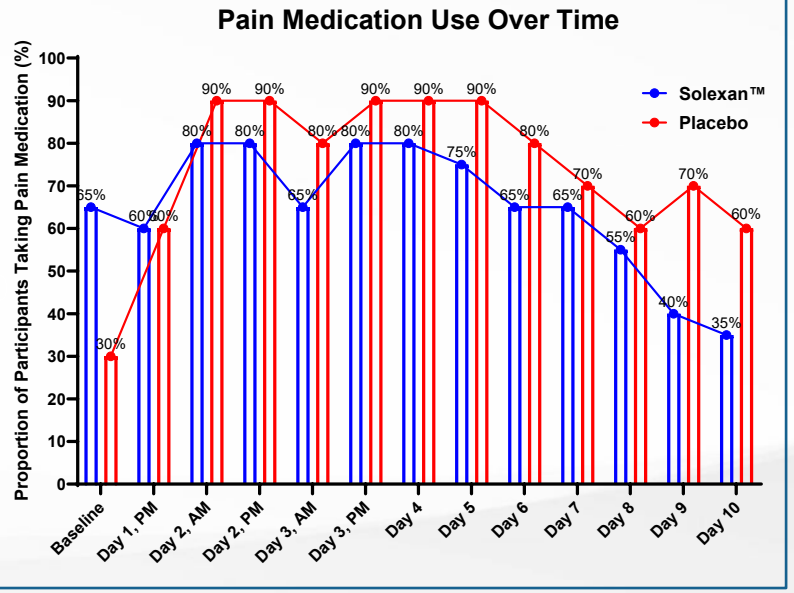
Faster Pain Relief
Median time to meaningful pain resolution (number of days until pain score reached <3)[1,2] was 6.5 days in Solexan™ group vs 19.5 days in placebo group. Pain medication use also lower from Day 2 onwards.

Positive Functional Impact
Trend towards improved daily functioning (pain interference scores) vs placebo as early as Day 5; an early and sustained benefit.

Post-Herpetic Neuralgia
Early indications that Solexan™ may reduce incidence of PHN, with more participants reporting being pain free at Day 30 visit in Solexan™ group (90%) vs in placebo group (70%).







[1]Coplan et al. Development of a measure of the burden of pain due to herpes zoster and postherpetic neuralgia for prevention trials: Adaptation of the brief pain inventory. *Journal of Pain.* 2004.
[2]Curran et al. Quality of life impact of an adjuvanted recombinant zoster vaccine in adults aged 50 years and older. *J Gerontol A Biol Sci Med Sci.* 2019.
Worst Pain: Solexan™ N=20, Placebo N=9. Pain Interference: Solexan™ N=18, Placebo N=9. Percentages reflect differences in evaluable patient counts at each timepoint. Only patients with baseline scores >0 were counted in the analysis. Exploratory study not powered for statistical testing; results are descriptive only.

Solexan™ Could Fill Treatment Gaps for Early and Late-Presenting Shingles Patients

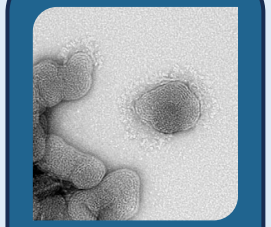
Commercial potential in two underserved groups: early-presenting patients needing better pain control, and patients presenting late (>72h post-symptom onset) where antivirals are only minimally effective

Within 3 days of rash onset

~65% of patients present within 72 hours

Oral antivirals

+

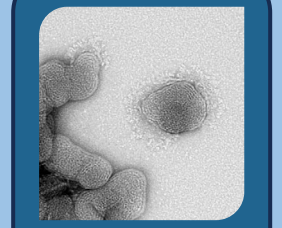


Solexan™

Adjunct to oral antivirals
for enhanced pain relief

3–10 days of rash onset (ineligible for oral antivirals)

~35% of patients present too late for antivirals



Solexan™

New standard of care for late presenters
where oral antivirals have minimal efficacy

Time from rash onset

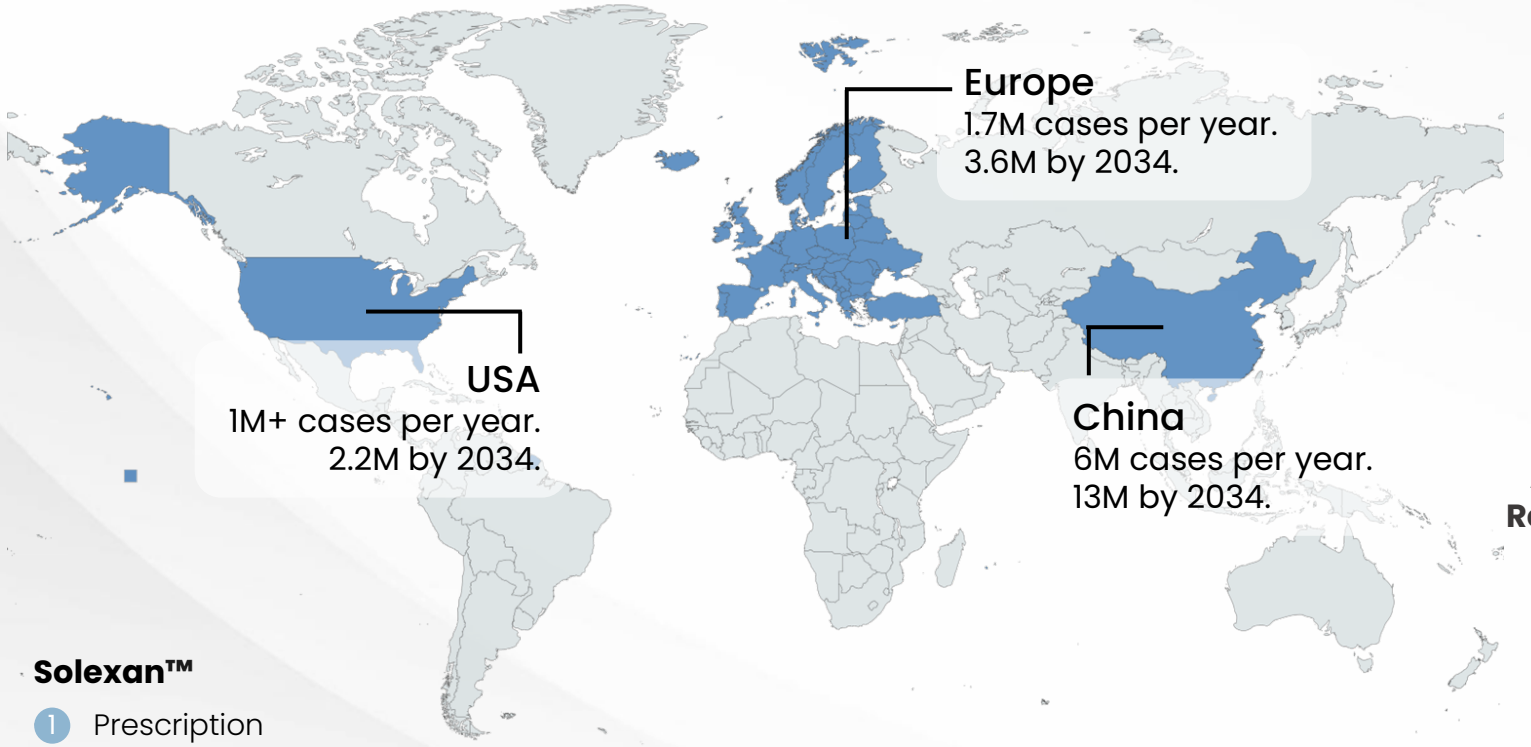
Analgesics
Analgesics like paracetamol and gabapentin can be taken anytime but offer limited pain relief and do not directly target the drivers of shingles pain.

As a topical therapy, Solexan™ may also offer an alternative for **immunocompromised patients**, those with **contraindications to systemic antivirals**, or in cases of **resistance to existing antivirals**.

Physician Perspective: Validating Solexan™'s Potential

Click to watch Dr. Wong's full interview (3 min)

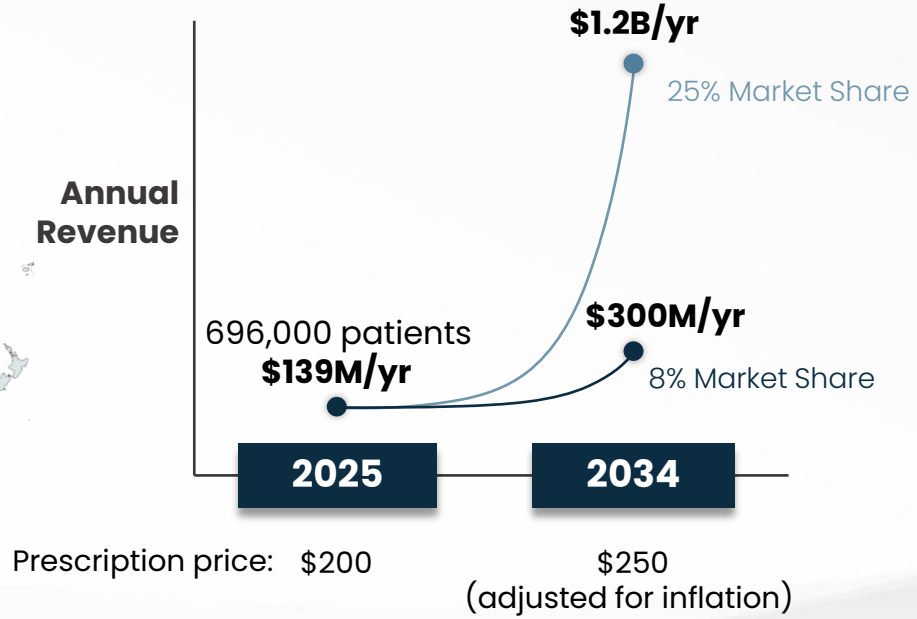
Solexan™ Global Market Opportunity



Solexan™

1. Prescription
2. Topical antiviral foam
3. Initiated at any point in the infection
4. Used alone or in combination with standard of care
5. Reduce pain without side effects

With few safe and effective topical shingles treatments available and in development, there is a strong potential for sustained market growth over time.



All figures in USD.

ROADMAP

Solexan™ for Shingles Pathway

Integrated clinical, regulatory, and commercial development plan for Solexan™, advancing toward European registration and strategic licensing.

EU National Scientific Advice Meeting
Engage with EU regulatory authority to align on Phase II design.

ZosterEase Phase II Trial*
Pivotal Phase II ~200-patient trial. 15 months to topline results. Approximately 20 sites; $12M USD.

License Deal
Target license or co-development deal following Phase II.

ZosterEase Phase III Trial*
Phase III trial to assess efficacy of Solexan™ in reducing shingles-induced pain.

*Clinical trials will be conducted in Australia to access the R&D Tax Incentive (R&DTI), currently providing a 43.5% refundable tax offset.

FINANCING

Deal Structure

$15M Round Now Open

Valuation: $36.3M Pre-Money

Structure: Equity

Use of Funds: Solexan™ Phase II trial from initiation through completion, including interim analysis and final data readout.

Milestones: 1. Interim analysis at 50% enrolment (Q1 2027) to assess early efficacy signal. Triggers Go/No-Go decision. 2. Full Phase II data package readout.

Only lead investors and pharma partners participating in this round retain rights to participate at the original $36.3M valuation during any follow-on rounds. New investors enter at the increased post-data valuation.

$12.65M
Phase II Clinical

$812k
Phase II Manufacture & Testing

$35k
Regulatory Support

$1.2M
Operating Costs

$84k
MOA Studies

$100k
BD

Summary ($USD)	
Target Funding	$15.0M
Structure	Equity
Round Close	Feb 1, 2026

All figures in USD. Amounts shown are estimated allocation of funds.

Wintermute Team

Board of Directors

Paul Field, FAICD
Chairman
Over 30 years business development experience in biotechnology with a deep network in the global biopharmaceutical industry. Paul has served on several boards and is a Fellow of the Australian Institute of Company Directors.

Prof John Skerritt, AM
Director
Chair, Science Scientific Advisory Council, Centre for Innovation in Regulatory Science; Board Member, Centre for Regulatory Excellence (Singapore) and Medicines Australia. Former Deputy Secretary, Australian Department of Health, and Head of the TGA.

Dr. Margaret Hartley GAICD, FTSE
Director
Investor. Margaret is a regulatory policy expert with skills in toxicology. A sought-after executive leader and influential strategy and policy analyst. Track-record in delivering innovative and strategic thinking and planning.

Bob Goodman
Director
Investor. Bob joined the Wintermute Board in November 2020. A mathematics instructor and a practicing attorney concentrating in the fields of personal injury and medical-related litigation.

Executive Management

Dr. Thomas Rau
Founder, Chief Executive Officer & Director
Over 25 years experience in scientific research. Specialist in neuroscience and medical microbiology, specifically multidrug-resistant bacteria.

Dr. Alyce Mayfosh
Chief Scientific Officer
Over 10 years of biomedical research and biotechnology experience. Served in leadership roles leading small teams to project success.

Carolyn Riska
Chief Operations Officer
Over 15 years in varied commercial roles within the pharmaceutical industry. Extensive operational and commercial expertise.

Wintermute Biomedical

We look forward to discussing this opportunity with you.

Dr. Tom Rau, CEO

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