



# Investor presentation

August 2018

# Agenda

1. Executive summary
2. Cannabidiol – target drug with significant potential
3. Phase 2 products – BTX 1503: acne and BTX 1204: atopic dermatitis
4. Pipeline products – BTX 1308: psoriasis and BTX 1801: antimicrobial
5. Outlook



# 1. Executive summary



# Key investment highlights

Botanix is an emerging global **dermatology company** with advanced clinical programs and an exciting pipeline



## Dermatology Focused

Advanced clinical programs targeting multi-billion dollar prescription markets for **acne and atopic dermatitis** where no new products have been approved for up to 20 years



## De-risked drug active

Products use a synthetic form of an FDA approved natural product - **greatly enhances the probability of success**



## Clinical Stage

**Successful clinical data** from acne and atopic dermatitis patient studies, shows industry leading performance, after only 4 weeks of treatment



## Novel Approach

Novel skin delivery system - **Permetrex™** - **greatly improves delivery of drug to the skin** compared to traditional approaches



## Experienced Team

Predominantly US based leadership team with **20+ FDA approvals** between them and extensive dermatology industry experience

# Corporate overview

Clear path to commercialisation and a highly aligned Board and management team

## Trading information

Share price (as at 10-August-2018)	A\$0.100
52 week low / high	A\$0.043 / A\$0.185
Shares outstanding <sup>1</sup>	684.7m
<b>Market capitalisation<sup>1</sup></b>	<b>A\$75.7m</b>
Cash (as at 30-Jun-2018)	A\$17.2m
Debt (as at 30-Jun-2018)	-
<b>Enterprise value</b>	<b>A\$58.5m</b>

## Top shareholders (June 2018)

Shareholder	%
<b>Matthew Callahan – Founder and Executive Director</b>	10.3
<b>Caperi Pty Ltd – Co-founder</b>	10.3
<b>Board and management (excl. shareholders above)</b>	2.9

1. Excludes 40.2m options

## Share price performance



# Clinical programs with near term milestones

Rapidly advancing acne and atopic dermatitis programs, with deep pipeline in development and Permetrex™ collaborations to augment revenue and news flow

Product candidate	Indication	Pre-Clin	Ph 1	Ph 1b	Ph 2	Next milestones
Synthetic form of natural product extract – cannabidiol	BTX 1503	Moderate to Severe Acne				Phase 2 study underway Data available mid-2018
	BTX 1204	Atopic Dermatitis				Phase 2 study start IND approval due 3Q CY2018
	BTX 1308	Psoriasis				Phase 1b study start 3Q CY2018
	BTX 1801	Antimicrobial				Phase 1b study start 4Q CY2018
Permetrex™ programs	Internal/ External	Various	Collaborations			Ongoing

## 2. Cannabidiol

Target drug with  
significant potential



# Cannabinoids are emerging as a hot new class of drugs

Cannabinoids are attracting strong interest as their efficacy and safety profiles are validated in clinical studies and as a result of the first FDA approval for cannabidiol use in epilepsy (Epidiolex® - GW Pharma)

## Significant clinical trial interest



- 38 Epilepsy
- 15 Pain
- 6 Cancer
- 17 Multiple Sclerosis
- 9 Schizophrenia
- 53 Other

**No studies in dermatology**

## First FDA approved cannabidiol product



Market Cap ~US\$3.8bn

Epidiolex® is GW's lead cannabinoid product

- Designed to treat two rare forms of childhood epilepsy
- First cannabidiol product to achieve FDA approval
- Analysts expect Epidiolex® to generate \$400-700M in annual sales





# FDA approval is the pathway to value

Just like cannabidiol for epilepsy – FDA approval means doctors can prescribe and insurance companies can reimburse a cannabidiol product that is quality controlled, effectively delivered and has undergone well-controlled clinical studies

## FDA approved vs not approved

US\$32,500 p.a\*



Epidiolex®

VS

US\$599 bottle\*\*



Elixinol™

\* GW Pharma Q3 Financial Results Webcast August 7 2018

\*\* Elixinol website accessed 8 August 2018

## BTX product comparisons

botanix PHARMACEUTICALS	
BTX Products	Cannabis Extracts/Creams
1 chemical	100+ chemicals
100% pure	Multiple impurities
FDA regulated manufacturing and controlled clinical studies	Questionable quality control and no clinical studies
Enhanced skin delivery technology	Limited penetration
Very high delivered dose (>100mg)	Very low delivered dose (<10mg)

*Note only 30% of CBD products have been found to be accurately labelled online - Bonn-Miller MO, et al. Labeling accuracy of cannabidiol extracts sold online. Jama. 2017;318(17):1708-1709.*

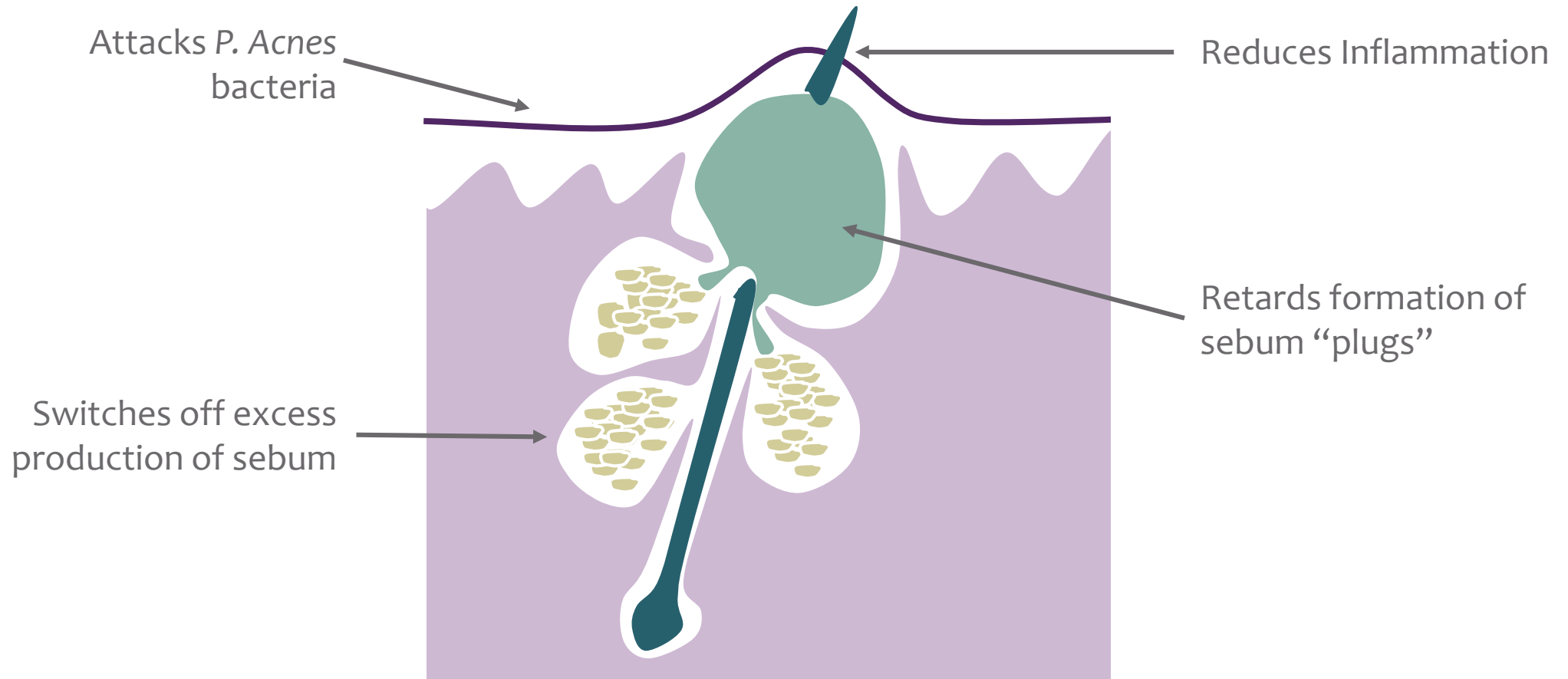
### 3. Phase 2 products

BTX 1503: acne

BTX 1204: atopic dermatitis

# BTX 1503: how does BTX 1503 work to treat acne?

BTX 1503 potentially address all 3 key pathologies of acne with a very safe side effect profile

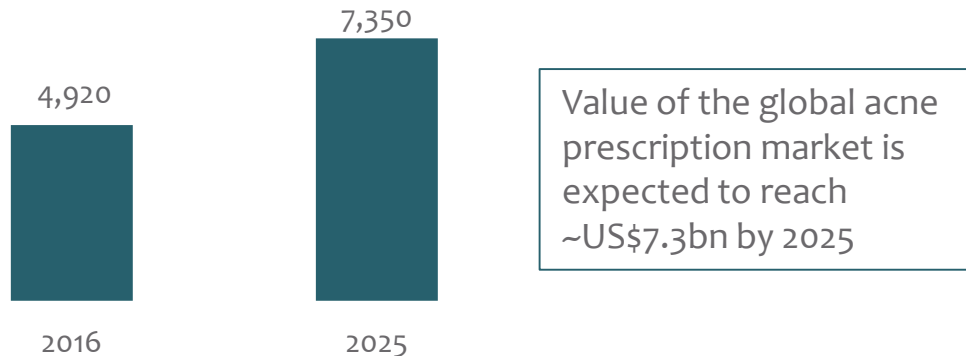


Source: Cannabidiol exerts sebostatic and anti inflammatory effects on human sebocytes (2014). The Journal of Clinical Investigation

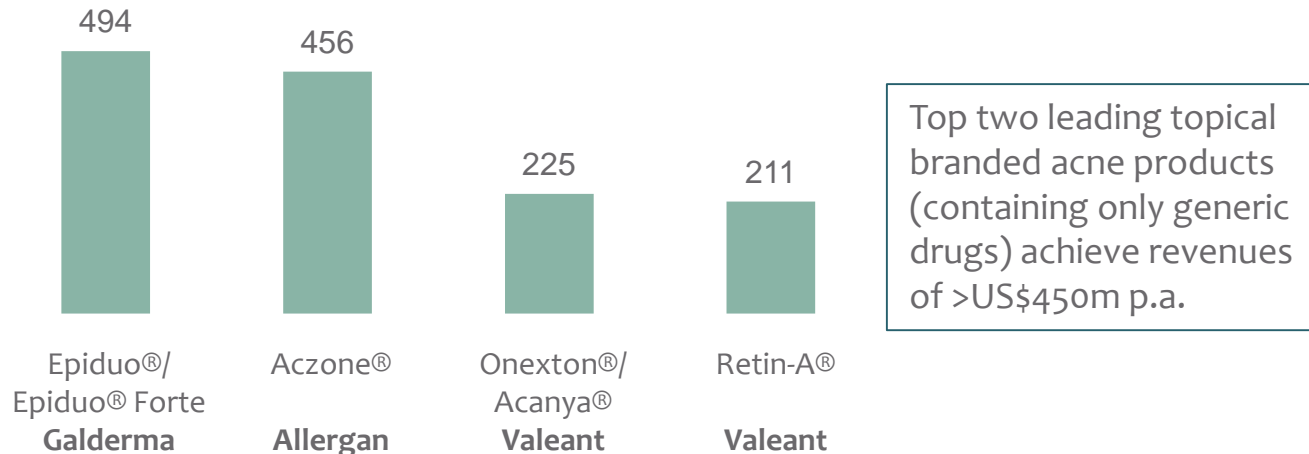
# BTX 1503: global acne market

Despite being a significant market, the global acne market is highly genericised and warrants products with novel mechanisms of action

## Global acne market size (US\$m)



## Branded topical acne products revenue in 2016 (US\$m)



- **Large demand with limited recent product development**

- No new drugs have been approved by the FDA in the last 20 years (since Tazorac® from Allergan in 1998)
- Only “new” products launched were combinations of old drugs in new formulations or packaging (including Epiduo® from Galderma)

- **For moderate to severe acne, topical retinoids are the most commonly prescribed therapeutic class**

- Accounts for ~32% of the US market
- Single active topical retinoid market ~US\$850m with 5m prescriptions p.a. (despite being generic)

# BTX 1503: outperforms leading acne products

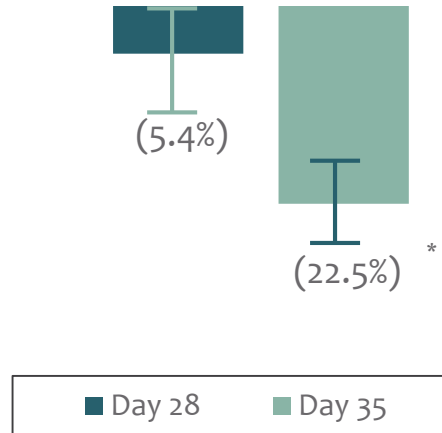
Study data resulted in a reduction in inflammatory lesions greater than any other FDA approved topical acne product - after only 4 weeks

## Lesion count reduction (%)

### Inflammatory lesions





### Non-inflammatory lesions



\* Day 35 results indicates the reduction effect persists 7 days after the last treatment

## Comparison of other FDA approved products

Product	Owner	Lesion count reduction (%) <sup>1</sup>	2016 annual revenue <sup>2</sup>
 Epiduo®	Galderma	~42%	US\$494m
 Aczone®	Allergan	~38%	US\$456m
<b>BTX 1503</b>	<b>Botanix</b>	<b>~47%</b>	-

- Combination of two drugs – benzoyl peroxide and adapalene
- ✗ Common side effects include redness, skin peeling mild burning / stinging and dryness

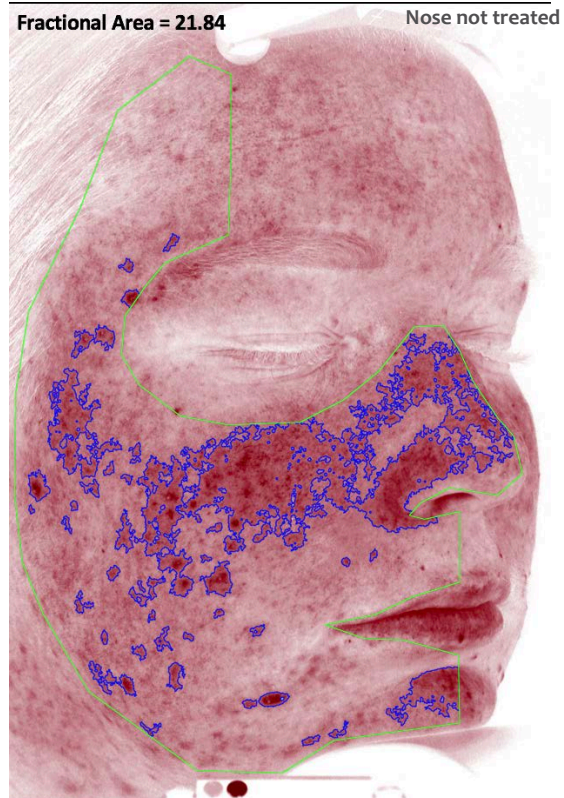
- ✓ Few side effects
- ✗ Studies showed large placebo / vehicle effect – i.e. at 12 weeks Aczone reduced inflammatory lesions by 54% while vehicle achieved 48% reduction

1. Lesion count reduction based on average inflammatory lesion reduction at 4 weeks  
 2. Based on 2016 annual revenue in the US  
 3. Patient demographics: 21 year old female

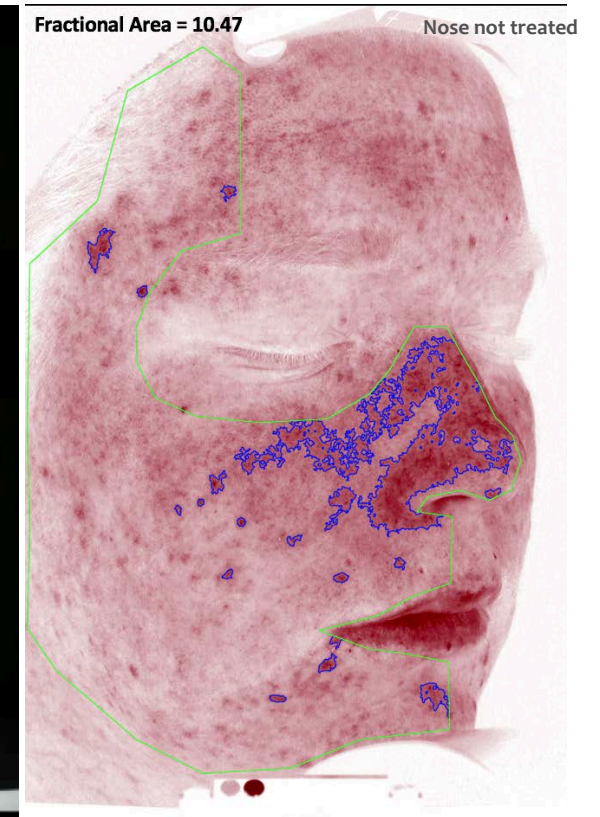
# BTX 1503: new data provides confidence cannabidiol is very effective

Newly processed cross-polarized images from the Phase 1b patient study, demonstrate deep penetration of BTX 1503 into skin layers and clear anti-inflammatory effect and improvement over the treatment course of only 4 weeks

Baseline (0 days)



Visit 4 (28 days)



See - Measuring acne using Coproporphyrin III, Protoporphyrin IX, and lesion-specific inflammation: an exploratory study Arch Dermatology Res 2017; 309(3): 159-167.

# BTX 1503: Phase 2 study overview

12-week randomised, treatment-blinded, vehicle controlled study to evaluate the safety and efficacy of BTX 1503 in patients with moderate to severe acne

## Design

- 5 dose groups: ~360 subjects
  - High Dose twice a day: ~90 subjects
  - High Dose once a day: ~90 subjects
  - Low Dose once a day: ~90 subjects
  - Vehicle/Control: ~90 subjects
- ~28 US and Australian dermatology sites
- Moderate to severe acne patients

## Endpoints

- Primary endpoints:
  - absolute change from Baseline to Week 12 in inflammatory lesions
- Secondary endpoints:
  - absolute change from Baseline to Week 12 in non-inflammatory lesions
  - % change from Baseline to Week 12 in inflammatory and non-inflammatory lesions
  - proportion of patients with IGA success
- Safety
  - adverse events and local tolerability

Commenced July 2018 (~12 months duration) – fully funded

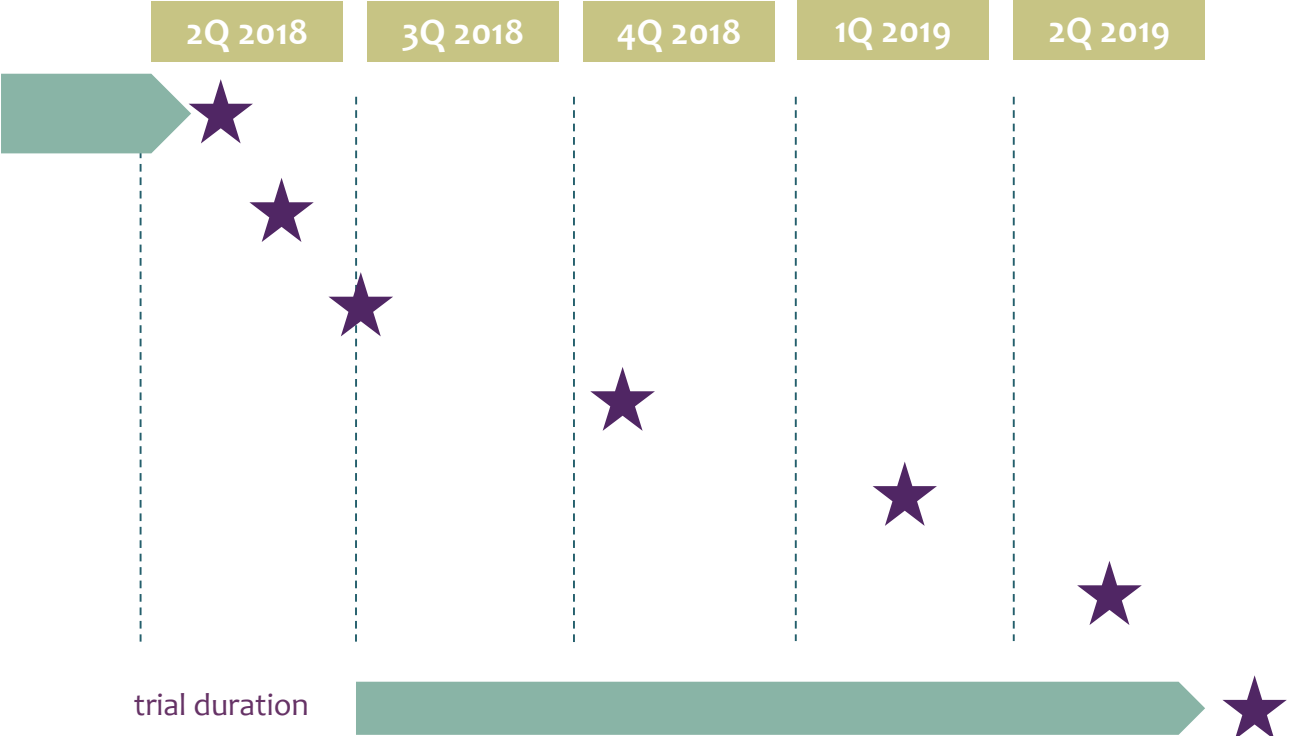
# BTX 1503: next steps

Botanix is pursuing a rapid clinical development strategy to accelerate product commercialisation and timing to first revenues

- Phase 2 clinical trial started mid-CY2018 and will take approximately 12 months to complete
- Trial designed to deliver data that allows licensing and other corporate opportunities

## BTX 1503 indicative clinical timeline (CY)

- File IND for FDA regulated Phase 2 trial
- IND 'approval' for Phase 2
- First patient enrolled in Phase 2 trial
- US and Australian sites all activated
- Patient enrolment complete
- Database lock



★ Milestones



# BTX 1204: atopic dermatitis disease overview

Atopic dermatitis (AD) is a chronically relapsing skin disorder with an immunologic basis, but for which environmental factors (allergens, stress, food and skin flora) all play a part

## AD - disease overview



**AD is a chronic skin condition and is considered the most common, severe and long lasting type of eczema**



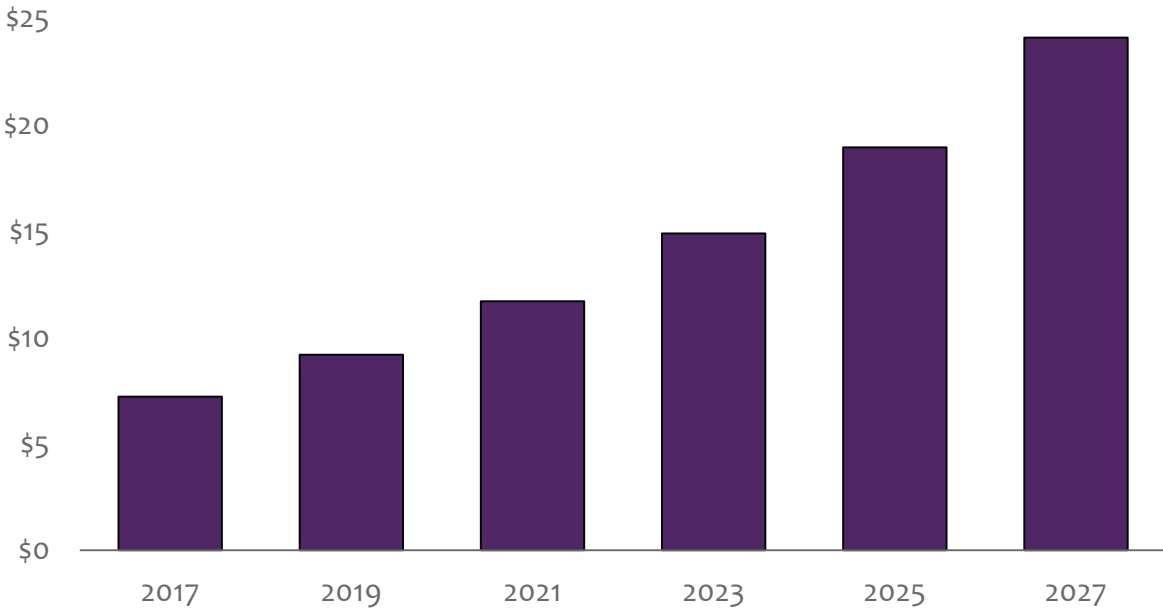
**Severe scratching and itching associated with AD can severely affect sleep and negatively impact quality of life**

- The exact cause of AD is unknown, but likely a combination of genetic and environmental factors
- AD can begin later in life, but 60% of patients develop the condition in the first year of life, and 90% develop it prior to 5 years of age
- **Commonly reported symptoms of AD are:**
  - Inflamed lesions
  - Exudation (ooze)
  - Thickening of the skin (related to itch)

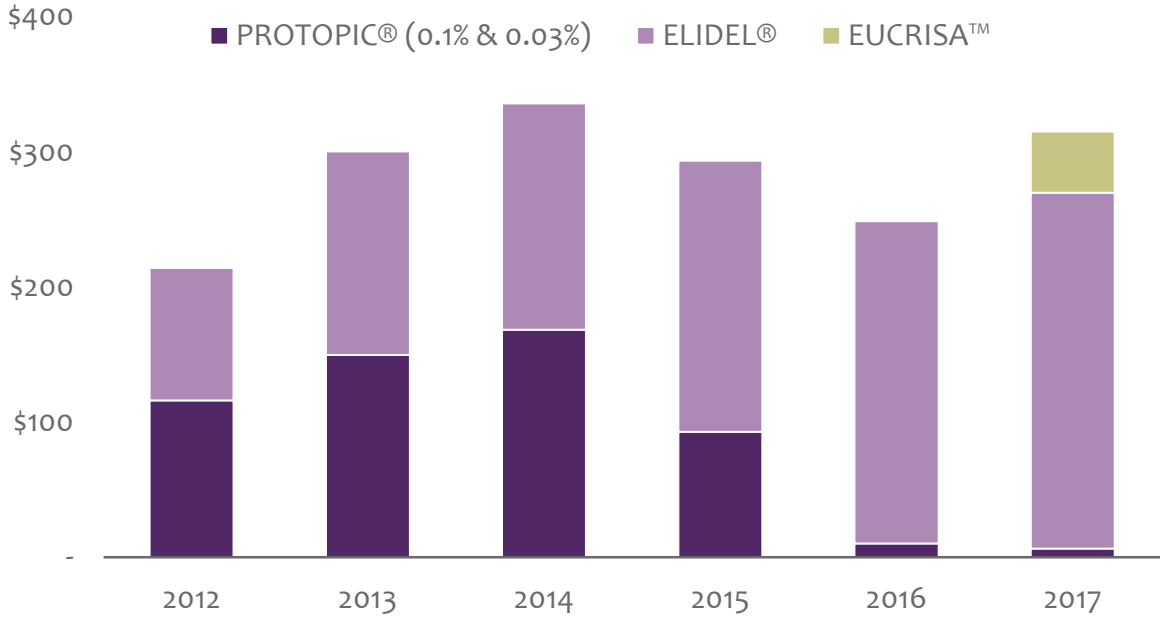
# BTX 1204: global atopic dermatitis market

The global AD market is forecasted to grow at a CAGR of 12.8% from ~US\$7bn in 2017 to ~US\$24bn by 2027

**Projected AD market by revenue (US\$bn)**



**Leading topical branded AD products by revenue (US\$m)**



**Limited innovation and significant remaining unmet needs**

Minimal innovation in AD for 15 years before the 2016 approval of Eucrisa®  
 Eucrisa® does not affect itch and has been considered a launch failure

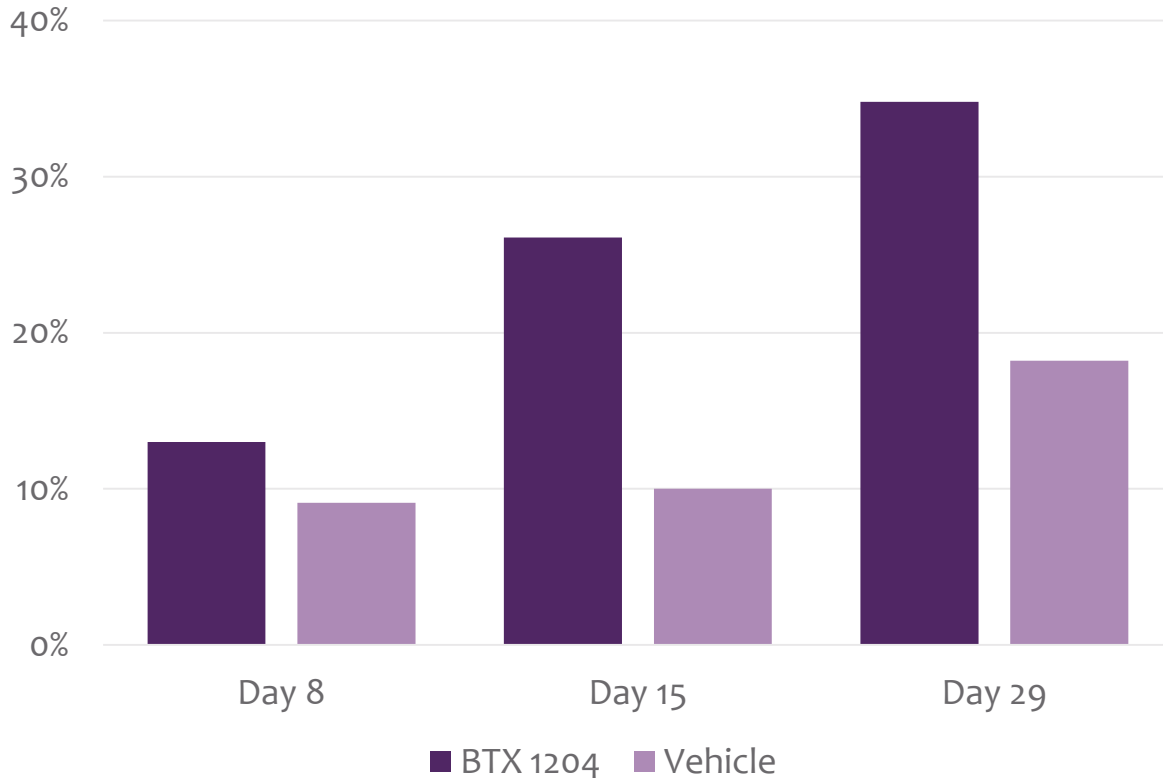
Source: Symphony Health Services (PHAST) 2017



# BTX 1204: Phase 1b study results

After only 4 weeks of treatment, study data indicated BTX 1204 was twice as effective over the vehicle (with efficacy still increasing) and substantial improvement in the key signs of AD observed

Treatment success (%)<sup>1</sup>



## Key takeaways

### Efficacy still increasing at 4 week timepoint

- Achieved treatment success similar to many competitive topical products at the end of their peak treatment period
- Data suggests longer treatment period for BTX 1204 possible for increased efficacy, potentially to exceed industry performance

### Clear separation from vehicle (placebo)

- Despite being a small study, BTX 1204 shows superiority over vehicle, starting at early time points
- First vehicle-controlled study for Botanix, which also supports potential for other pipeline products

### Excellent safety profile

- Safety and tolerability established with no burning, stinging or application site serious adverse events
- BTX 1204 profile allows extended dosing which remains a key challenge with most available therapies

Notes: Results indicated substantial reduction in key signs of AD, providing confidence that unmet needs in AD can be addressed - more detailed results on slide 33

1. Treatment success defined as a greater than, or equal to, a 4 point improvement in the signs and symptoms of AD

# BTX 1204: Phase 2 study design

12 week randomised, double-blind, vehicle controlled study to evaluate the safety and efficacy of BTX 1204 in patients with moderate AD

## Design

- 2 dose groups: ~200 subjects
  - BTX 1204: ~100 subjects
  - Vehicle/Control: ~10 subjects
- ~25 US and Australian dermatology sites
- Children and adults
- Moderate AD patients

## Endpoints

- Primary endpoint:
  - proportion of subjects with ISGA success defined as an ISGA score of “Clear” (0) or “Almost Clear” (1)
- Other endpoints:
  - change from Baseline in the Signs of AD
  - Eczema Area Severity Index (EASI) Score
  - % body surface area (BSA) affected by AD
  - time to achieve IGA success
- Safety
  - adverse events and local tolerability

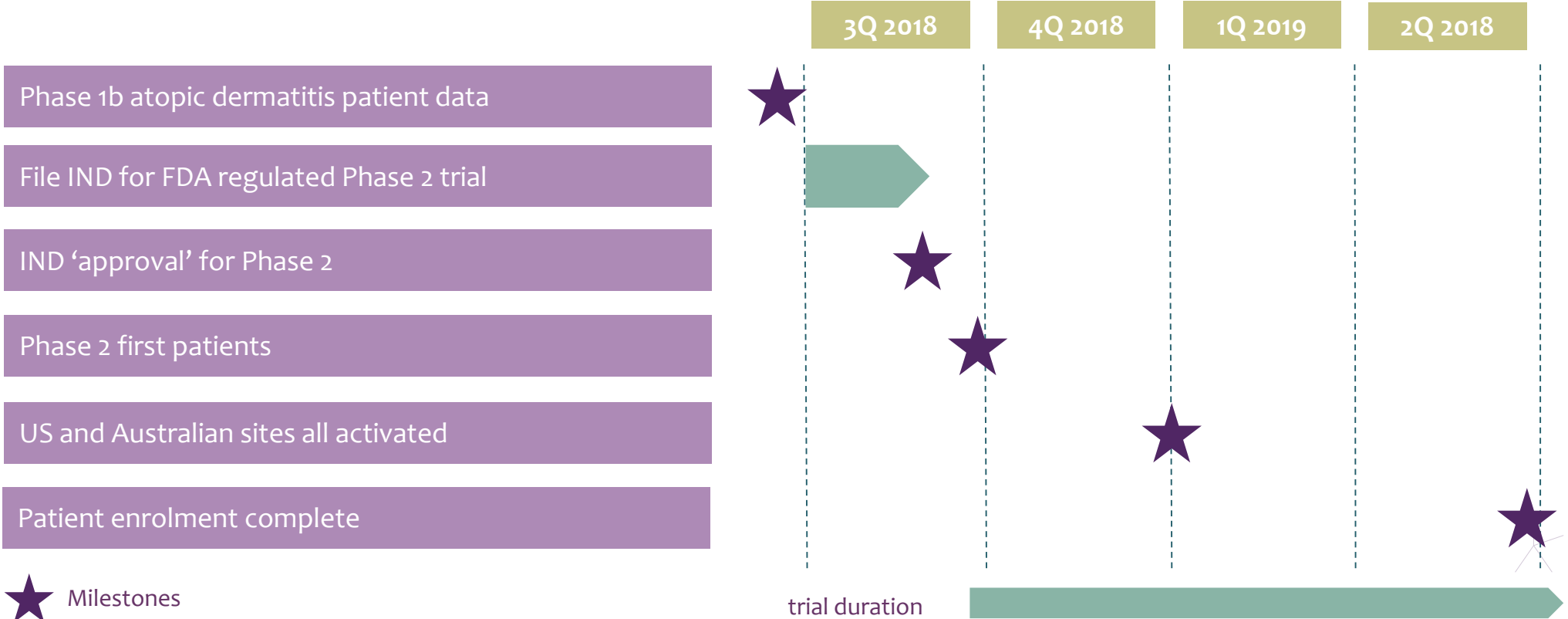
IND submitted to FDA and approval expected in Q3 CY 2018 – fully funded

# BTX 1204: next steps

Botanix is pursuing a rapid clinical development strategy to accelerate product commercialisation and timing to first revenues

- Development program leverages existing data from BTX 1503 acne studies, so regulatory and safety risk is low

## BTX 1204 indicative clinical timeline (CY)



★ Milestones

## 4. Pipeline products

BTX 1308: psoriasis

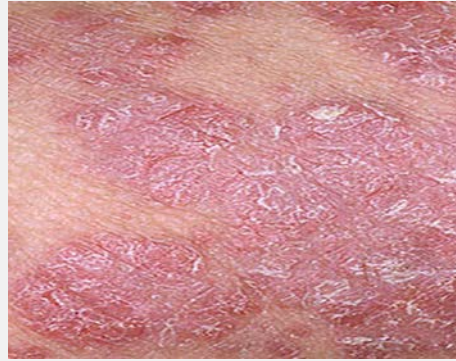
BTX 1801: antimicrobial

# BTX 1308: overview

Development pipeline also includes other synthetic cannabidiol and Permetrex™ enabled products targeting key dermatology markets

## BTX 1308: psoriasis

- **Target market:** ~7.5m Americans have psoriasis (note: most have plaque psoriasis)
- **Market size:** estimated annual costs of injectable biologic treatments in the US is ~US\$20bn p.a.
- **Current issues:** biologic drugs are very expensive and have serious side effect issues (including lymphoma)
- **Unmet needs:** safe and effective topical product



*Psoriasis*

**Botanix is planning a Phase 1b study to commence in 3Q CY2018**



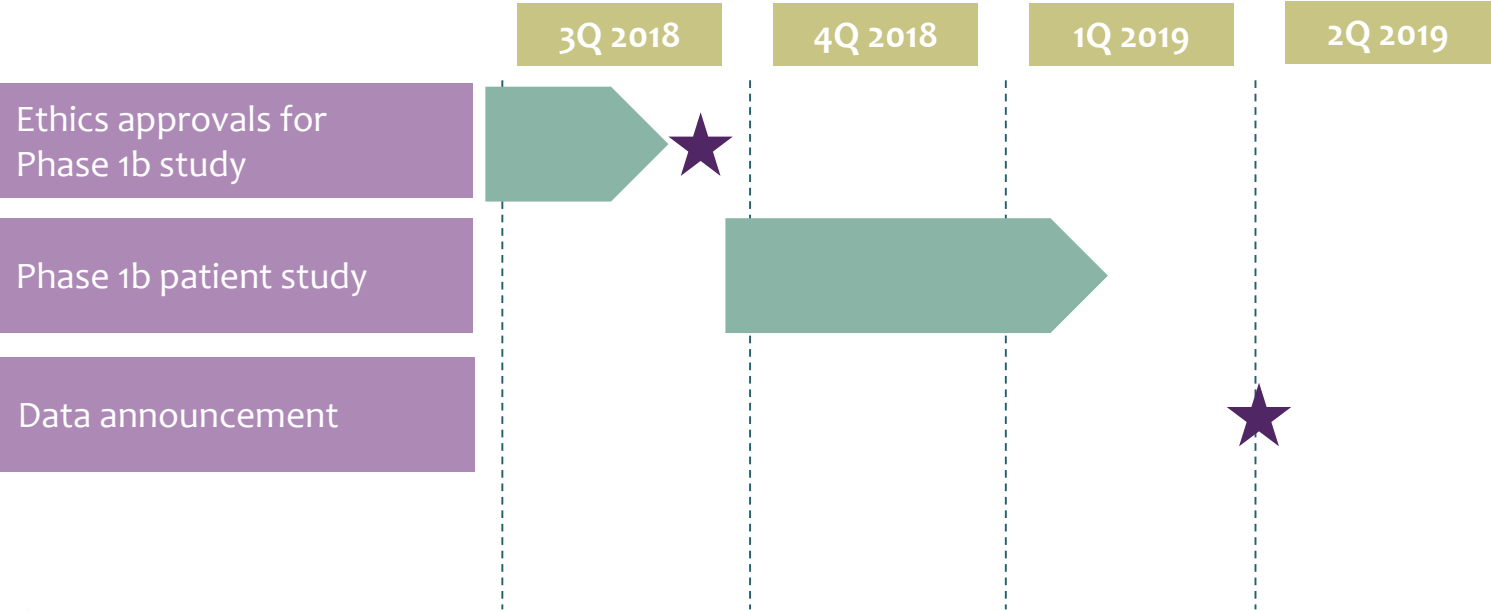
## BTX 1308 leverages prior data from:

- ✓ BTX 1503 acne clinical program
- ✓ Permetrex™ delivery system studies
- ✓ No need to repeat early studies

# BTX 1308: next steps

Botanix is preparing for a Phase 1b study to test BTX 1308 against placebo and another psoriasis drug in patients starting in Q3 CY2018

## BTX 1801 indicative development timeline (CY)



★ Milestones

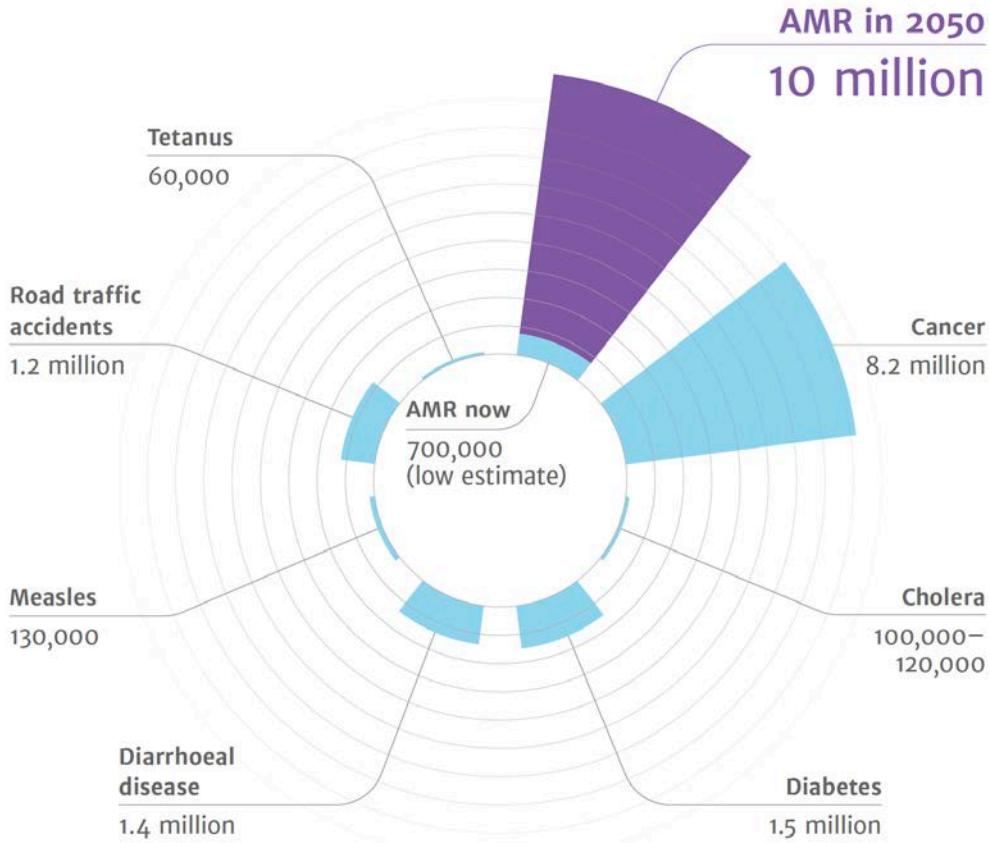
- Development program leverages existing data from BTX 1503 and BTX 1204 programs – no need to repeat early clinical studies and low regulatory risks
- Clinical studies are rapid and provide comparative data to demonstrate efficacy and safety benefits



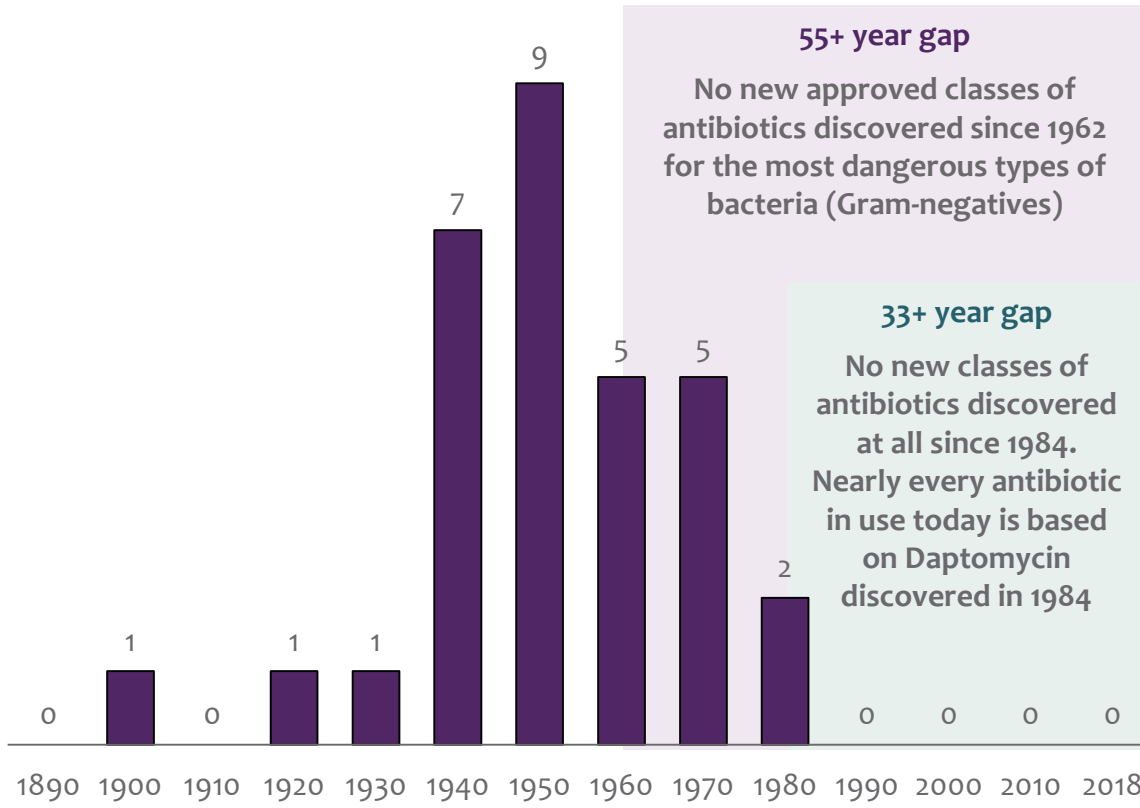
# BTX 1801: the problem of antimicrobial resistance

More than 700,000 people die as a result of antimicrobial resistance globally every year and estimates predict that by 2050, 10m lives p.a. will be at risk. However, no new classes of antibiotics have been approved in 33+ years

Deaths attributable to antimicrobial resistance (AMR)<sup>1</sup>



Number of antibiotic classes discovered or patented<sup>2</sup>



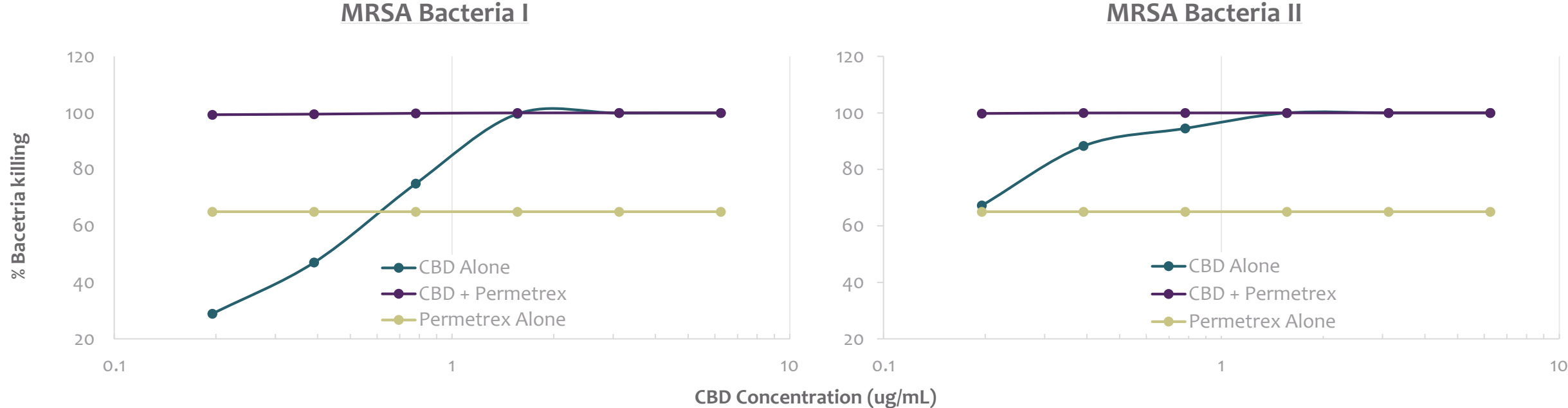
1. Tackling Drug Resistant Infections Globally Final Report and Recommendations (2016), The Review on Antimicrobial Resistance  
 2. Pew Charitable Trusts; Deak et al. Progress in the Fight Against Multidrug Resistant Bacteria?; A Review of FDA Approved Antibiotics 2010-2015. 31 May 2016. DOI: 10.7326/M16-0291



# BTX 1801: Permetrex™ formulation of cannabidiol

In two of the common antibiotic resistant bacteria strains, Permetrex™ significantly improves the killing power of cannabidiol, to achieve close to 100% bacteria killing effect (at low concentrations)

### Summary of data



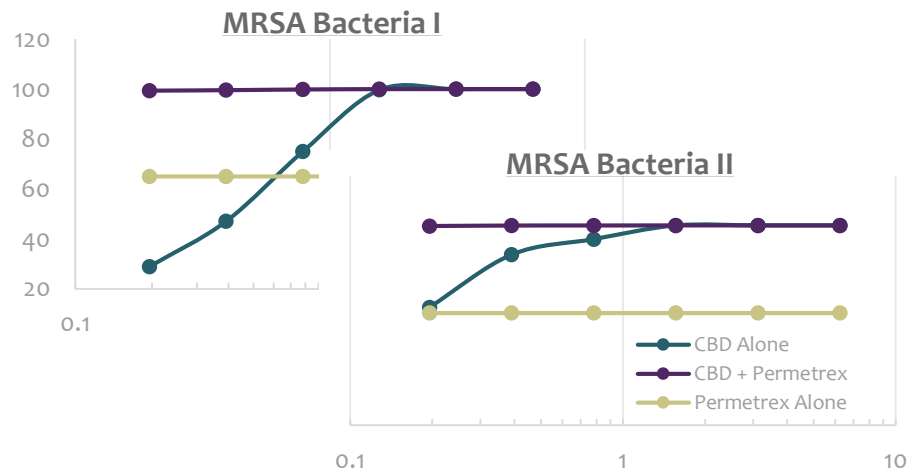
Combination of Permetrex™ and cannabidiol achieved high levels of bacteria killing (at low concentrations) by **allowing the active drug to permeate the biofilm / protective layer** often secreted by bacteria and **killing 99%+ bacteria to substantially reduce potential for resistance development**



# BTX 1801: results summary

BTX 1801 data demonstrates potential for a new antimicrobial to treat unmet needs in skin infections together with additional benefits seen in prior Botanix studies (e.g. reduction in inflammation)

## Summary of data



***The study results demonstrate that the delivery of cannabidiol with Permetrex™ can reduce the concentration of the active drug required to achieve the highest levels of bacterial killing***

## BTX 1801 may have the following benefits

- ✓ Gram-positive bactericidal effect
- ✓ New mechanism of action
- ✓ Active against MRSA
- ✓ Topical application suited for skin infections
- ✓ Benign side effect profile based on previous clinical studies
- ✓ Ability to use long term
- ✓ Anti-inflammatory and skin barrier improvement properties
- ✓ Suitable for treatment of children (due to low toxicity)
- ✓ Prevent early use of IV antibiotics (significant side effects)



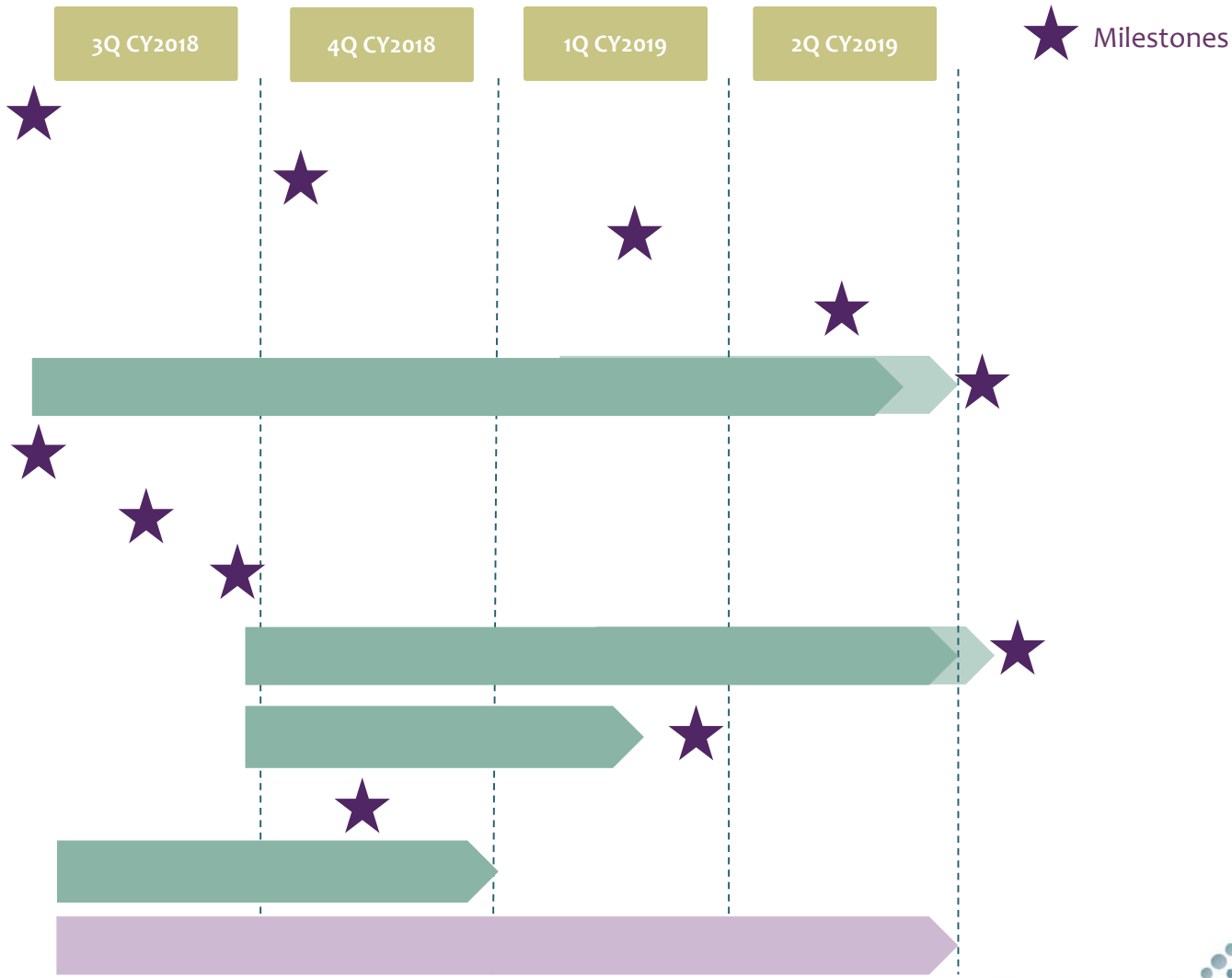
## 5. Outlook

# Key catalysts

Significant clinical and operational milestones across multiple programs expected over the next 12 months

## Indicative activities and milestones

Phase 2 BTX 1503 Acne	First patient enrolled in Phase 2 trial
	All US and Australian sites active
	Patient Enrolment Complete
	Database Lock
	Phase 2 multi-centre acne patient clinical trial
Phase 2 BTX 1204 Atopic Dermatitis	Phase 1b study successful data announcement
	IND 'approval' Phase 2 trial
	First Patients Phase 2 trial
	Phase 2 multi-centre AD patient clinical trial
BTX 1308 Psoriasis	Phase 1b study in psoriasis patients
BTX 1801 Antimicrobial	Indication identification
	Collaboration with UQ
Permetrex™	Research collaborations and partnership discussions



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