

26th June 2019 | CannPal Animal Therapeutics Limited ACN: 612 791 518 | ASX:CP1

CannPal to present at the 2019 Asian Hemp Investment Summit

Key Highlights

- CannPal is presenting at the 2019 Asian Hemp Industry Investment Summit at the Kerry Hotel in Hong Kong on June 28th 2019;
- Managing Director, Layton Mills, will be presenting on the Company's progress and the opportunity for cannabinoids in the animal health market in Asia;
- Mr Mills's presentation is attached to this release.

26th June 2019: Animal health company **CannPal Animal Therapeutics Limited (ASX:CP1)** ("CannPal" or "the Company") is pleased to attach a presentation that will be delivered by CannPal Managing Director, Mr Layton Mills, at the 2019 Asian Hemp Industry Investment Summit at the Kerry Hotel in Hong Kong on June 28th 2019.

The purpose of the summit is to bring together cannabis industry leaders from all over the world, including expert groups on cannabis legislation in various countries, investment groups, and medical scientific research experts, to support the development of the Asian cannabis industry.

The forum is being co-hosted by the CBDG-Cannabis Industrial Fund alongside Arcview Group. The Arcview Investor Network includes more than 600 accredited investors who have put more than US\$190 million behind 175 companies since inception.

About CannPal Animal Therapeutics

CannPal Animal Therapeutics Limited (ASX: CP1) is a pharmaceutical-focused animal health Company researching the benefits of medical cannabis for companion animals. CannPal is researching and developing medicines derived from cannabinoids to provide veterinarians with clinically validated and standardised therapeutics to treat animals in a safe and ethical way.

CannPal has identified a significant opportunity to benefit from the rapidly growing medical cannabis and health markets by developing innovative therapeutics derived from the cannabis plant. The Company is working closely with regulatory authorities and veterinary research organisations conducting clinical trials to commercialise therapeutic products that will meet regulatory approval and support the health and well-being of companion animals. To learn more please visit: www.cannpal.com

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Key investment highlights



Global Animal Health company

- ✓ **Targeting unmet needs** in the global animal health market
- ✓ Addressing a **significant and rapidly growing** animal health market



Lead product in clinical stage

- ✓ Lead product commencing Phase 2 clinical trials with a significant **global potential** (a growing market size of >US\$1bn p.a)
- ✓ Fully funded **for Phase 2A and 2B** pilot studies



Accelerated development pathway

- ✓ Relatively **faster regulatory approval timelines** for animal health products (compared to human trials)
- ✓ Resulting in **significantly lower development costs**



Exciting development product portfolio

- ✓ Lead nutraceutical product provides **near term revenue potential**
- ✓ **Active R&D pipeline** – including new product development and additional revenue generating opportunities identified



Experienced leadership team

- ✓ **Extensive commercialisation experience** in the animal health industry
- ✓ Knowledgeable R&D team in place with proven track record of gaining regulatory approval for more than 50 veterinary medicines

CannPal is an animal health company with a highly aligned senior leadership team invested in the Company's success

Share price performance (June 2018 to June 2019)



Trading information

Share price (as at 24-Jun-19)	A\$0.14
52 week low / high	A\$0.105 / A\$0.21
Shares ¹	93.1m
Market capitalisation (as at 24-Jun-19)	A\$13m
Cash (as at 20-Jun-19)	A\$3.5m
Debt (as at 20-Jun-19)	-
Enterprise value	A\$9.5m

Key shareholders (June 2019)

Merchant Opportunities Fund – investment fund	19.6%
Gemelli – HNW investor	9.32%
Pepanne – HNW investor	8.23%
Layton Mills – managing director	8.1%
Tania Vidovic – ex. non-executive director	7.4%

1. Includes escrowed shares (50.0m) and excludes options (12.5m; exercise price: A\$0.20 to A\$0.25; expiry: June-20 to Nov-22) and performance rights (1.9m)

Senior leadership



Entrepreneurial founder supported by an experienced Board and highly skilled management and R&D team – all invested in CannPal's success



Geoff Starr

Non-Executive Chairman

- Over 32 years of executive experience, including 9 years leading MARS Global pet care businesses
- Significant global experience having worked 13 years in Asia and 10 years in the US and Europe
- Previously held executive positions in Unilever and George Western Foods



Layton Mills

Founder / Managing Director

- Experienced FMCG entrepreneur with over 10 years in brand and product development
- Launched numerous retail and consumer goods brands in the Australian market
- International business experience across Europe, Asia and North America

Cannpal's board and management made up of renowned leaders from the animal health industry, major pharma and large MNCs

MARS
petcare

Jurox

Lilly

U
Unilever

Elanco

Johnson & Johnson

Cannpal's broader R&D team have been involved in gaining regulatory approval for over 50 veterinary medicines

Comfortis
(spinosad)

Alfaxan[®]

Trifexis
(spinosad + milbemycin oxime)

Elanco
Imrestor[™]

Elanco
Micotil[™]

Elanco
Compudose[™]

Q-drench[®]

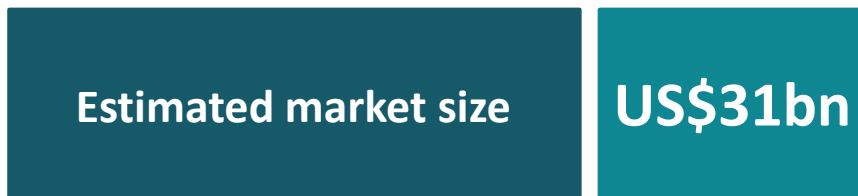
CannPal's senior leadership saw a significant unmet market opportunity within the animal health sector, with pain management being the primary initial focus

Global animal health industry

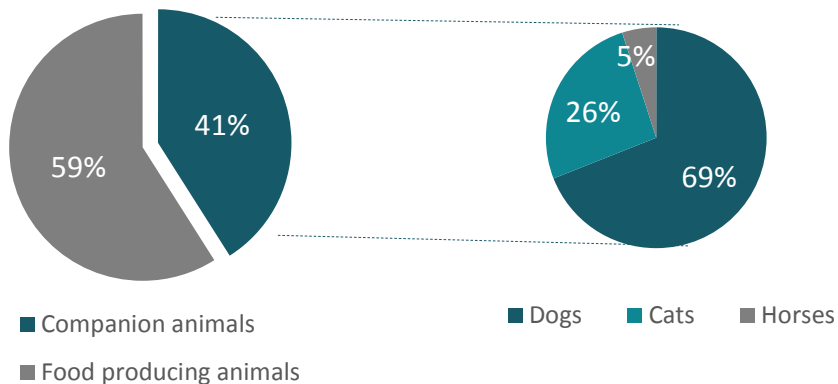


The total pet care market reached US \$125b in 2018 as the rise in the adoption of pets and growing demand for premium products drive market growth

Global animal health industry

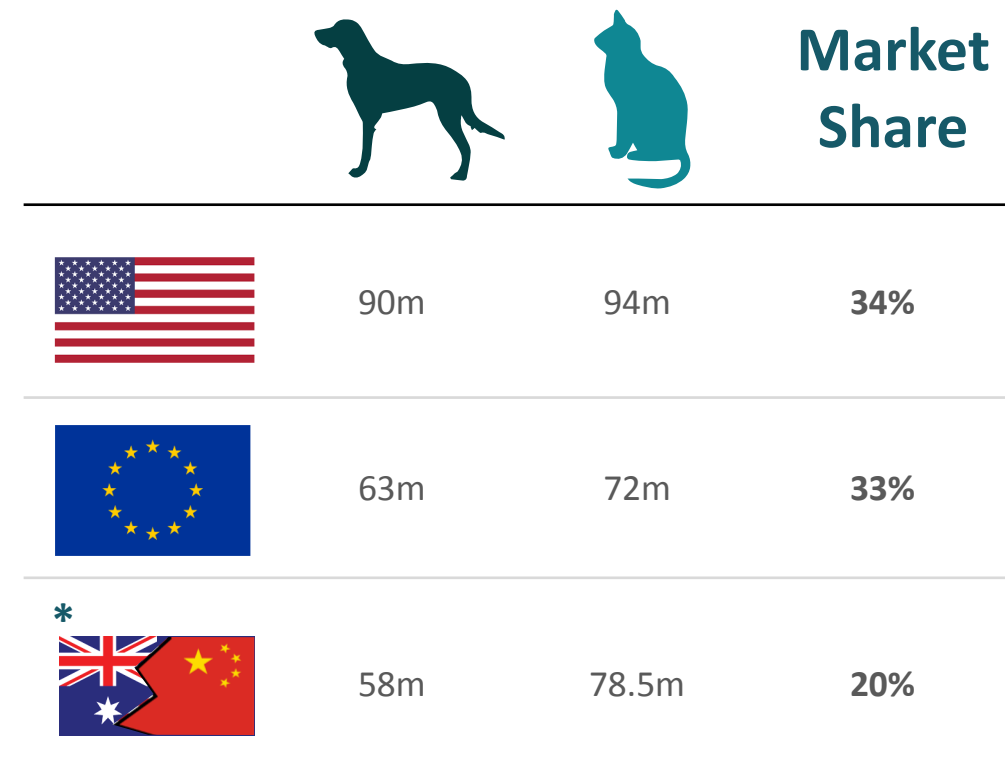


Market composition



The companion animals market for dogs and cats is estimated to be approximately US\$12bn

Major Geographical Markets



* APAC- China, Hong Kong, Japan, India, Australia, New Zealand

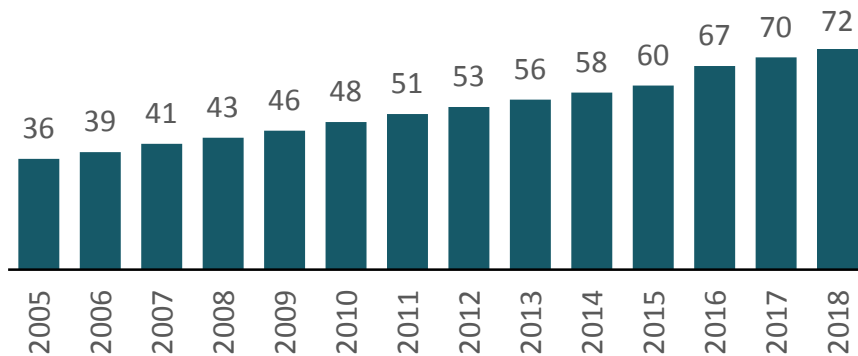
Source: Company filings; Staista; American Pet Products Association; IFAH Europe; Australian Veterinary Association

Key animal health trends

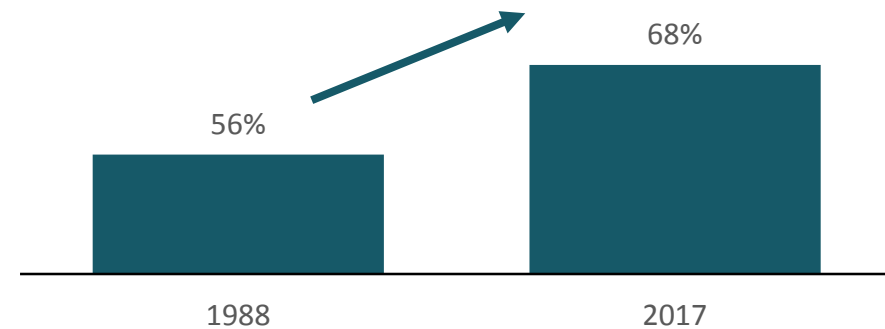
The animal health market is underpinned by favourable industry trends and key growth drivers – reflected in the US pet drug market growing >20% from 2015 to 2017

Increase in US pet spending
US Pet Industry Expenditure (US\$bn)

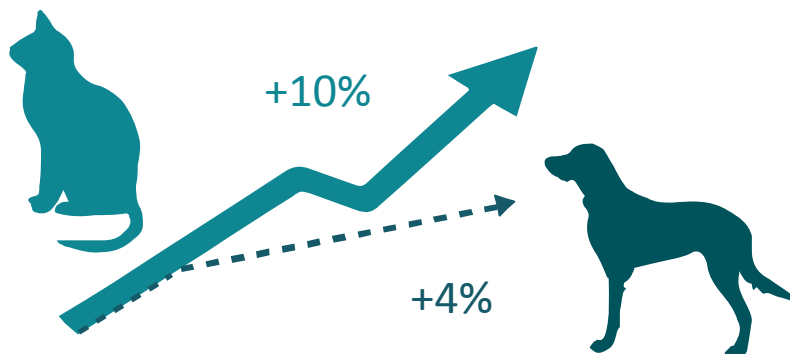
CAGR: ~6%



Increase in pet ownership levels
US household pet ownership (%)

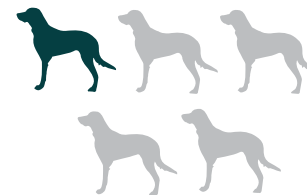


Increased pet lifespan
Lifespan increase (2002-2012 data)



High prevalence of arthritis and obesity

1 in 5 dogs has arthritis



56% obesity rate in the US

Majority of cats show evidence of arthritis



60% obesity rate in the US

A strategic focus on the development of evidence-based cannabinoid derived pharmaceutical and nutraceutical products for companion animals

Animal Pharmaceuticals

- ✓ Drugs used in the **TREATMENT** of a disease
- ✓ Usually require veterinary prescription
- ✓ Standardized drug product
- ✓ Often more expensive than nutraceuticals
- ✓ Not always suited to longer term use
- ✓ Longer time to market with more cost in the development

Animal Nutraceuticals

- ✓ Products that may assist in **PREVENTING** disease
- ✓ Do not always require prescription
- ✓ Less onerous data pack required
- ✓ Can be used longer term, with wider safety margin
- ✓ Shorter time to market, with less cost in the development

CannPal is primarily focused on pharmaceutical product development, while leveraging research to develop complimentary revenue generation opportunities via nutraceutical pathways

CannPal's lead Pharmaceutical candidate, CPAT-01, has been developed using active ingredients from the cannabis plant to target symptoms of osteoarthritis

- ✓ A standardized pharmaceutical product derived from THC and CBD extracts
- ✓ Targeting pain and inflammation in dogs with osteoarthritis
- ✓ Synergistic effects of combining CBD with THC reduces the psycho-activity of THC and enhances pharmacokinetics
- ✓ Cost-effective alternative to existing anti-inflammatory medication for dogs, with potentially less side effects
- ✓ Favourable industry tailwinds given the growing prevalence of obesity and arthritis in dogs
- ✓ Formulated as an oral liquid solution to allow for compliant and more personalised dosing

Estimated market size*	US\$1bn+
Regulatory Landscape	FDA/EMA/ACVM approval as a prescription veterinary medicine .
Current status	Phase 1 completed, commenced Phase 2 pilot studies.
Commercial isation strategy	Multiple options including strategic partners for licencing opportunities
<u>Lifecycle strategy</u> Expand into other therapeutic areas and other species (cats)	

Note: THC (tetrahydrocannabinol); CBD (cannabidiol)

CPAT-01: pharmacokinetics



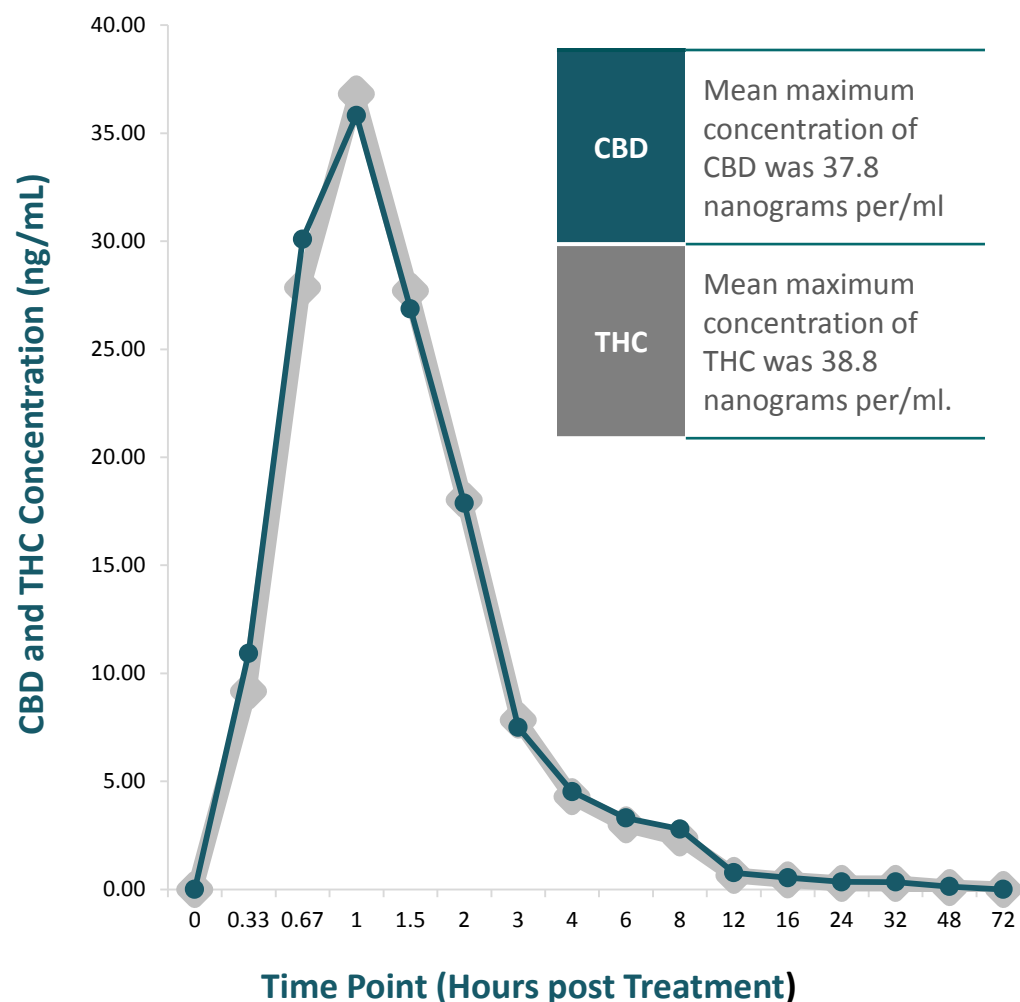
The initial target dose was found to be bioavailable with a wide safety margin, no observed psychotropic effects and no adverse events

Phase 1A: Study overview

- ✓ Safety, Pharmacokinetic and Tolerability study
- ✓ 11 healthy dogs (8 active / 3 control) using Beagles and Foxhounds
- ✓ Dogs received proprietary oral cannabinoid formulations containing both THC and CBD
- ✓ Blood samples taken over 72 hour period for PK, gene expression and biomarker analysis

Phase 1A: Study results

- ✓ Excellent safety profile at the initial target dose
- ✓ No evidence of adverse effects were observed at the dosage administered
- ✓ CPAT-01 was well absorbed in its current proprietary formulation



Note: THC (tetrahydrocannabinol); CBD (cannabidiol)

CPAT-01: pain and inflammation



Significant* changes in gene pathways and biomarkers known to modulate anti-inflammatory processes were seen in treatment groups compared to placebo

Potential for multi-modal mechanism of action

- ✓ Targeting endo-cannabinoid system through CB1 and CB2 modulation;
- ✓ Potential to influence the inflammatory cascade through chemokines and cytokines
- ✓ Potential for modulation of the immune response, through various processes

CPAT-01 treatment can influence the endo-cannabinoid system in dogs, through the ECS gene and receptor pathways

Various other Genes and inflammatory biomarkers were significantly* influenced by CPAT-01 Treatment in early research



CPAT-01 influences Cannabinoid Receptor 2 which plays an important role in pain and inflammatory signalling and responses



CPAT-01 upregulated chemokine ligand 5 (CCL5) which codes for a chemokine important in recruiting white blood cells to inflammatory sites - *Schall et al 1988*.
PACHER, et al 2006



CPAT-01 downregulated interleukin 8, which is consistent with cannabinoids being potent inhibitors of the inflammatory cascade – *Ha et al 2017*



CPAT-01 was involved in reducing GM-CSF, consistent with effects seen in humans treated with CBD and THC - *Pellati et al 2018*



CPAT-01 increased Interleukin 15, which is consistent with an upregulation of IL-15 reported to modulate the immune response in humans – *Patidar et al. 2016*

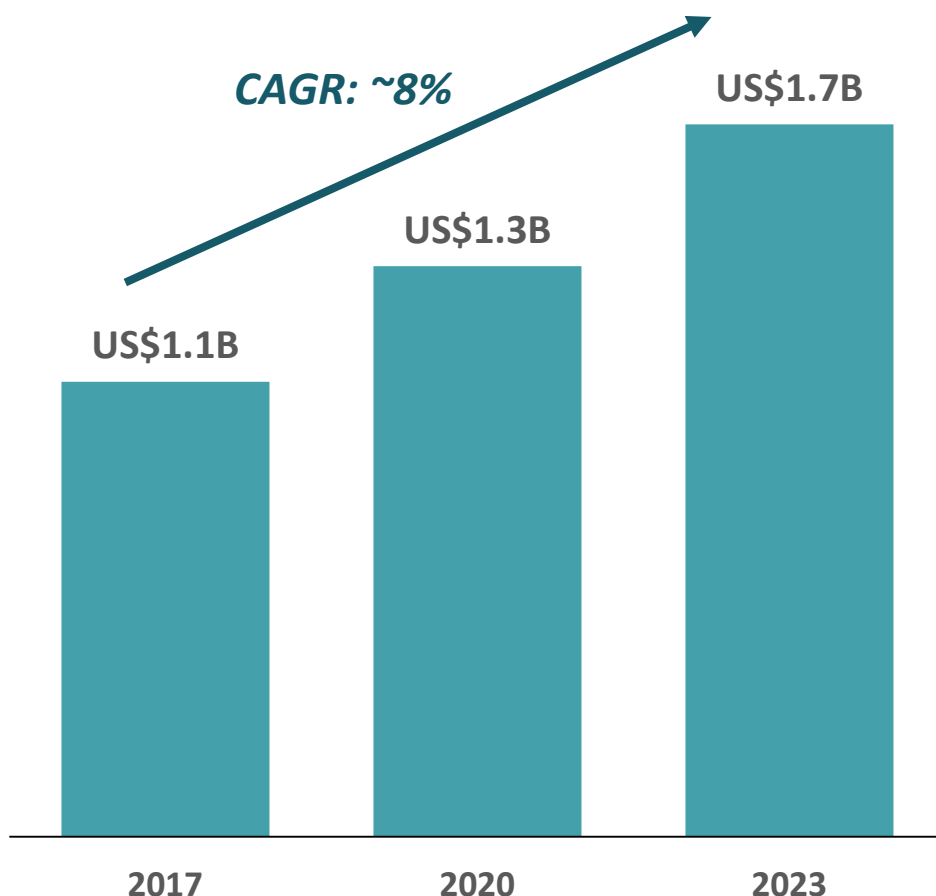
Note: Significant (<p0.05) for gene expression and (<p0.1) for inflammatory biomarkers; ECS (endo-cannabinoid system)

CPAT-01: market opportunity



CannPal's lead product is at the forefront of a fast growing and significant market opportunity worth over US\$1bn p.a.

Global veterinary pain medications revenue (US\$bn)



Source: The Veterinary Cancer Society; various internal company research reports

Favourable market dynamics

Existing products have inferior characteristics

- Non-steroidal anti-inflammatory drugs (NSAIDs), which dominate the market, have **onerous label warnings**, **significant side effects** and **high levels of toxicities**

Limited product innovation to date

- Average age of animal health product portfolios is **~15 years** – no more lifecycle strategies for current treatments
- **Slowing investment in animal health R&D** – M&A is the key strategy for majors seeking competitive advantage

Strong market demand for novel treatment

- **Strong demand from veterinarians** for improved products for treating chronic pain in dogs and cats
- Currently **no pain medication approved for chronic use** in pet cats in the US (over 3 consecutive days)

Significant and valuable opportunity

- **Ideally positioned to gain market traction** in a target indication with favourable market dynamics

CPAT-01: market positioning



CPAT-01 addresses a clear unmet need of providing veterinarians with access to regulatory approved cannabis-based treatments for companion animals

- There are currently no FDA/EMA regulatory approved cannabinoid-derived medicines for companion animals
- Cannabinoids could provide additional benefits for the symptoms of osteoarthritis due to various modes of action
- NSAIDs are widely known for negative side effect profiles and not desirable for long term use
- Cannabinoids may be used as an adjunct therapy alongside other NSAID's, expanding the market potential



Key comparisons	CPAT-01	Rymadil	Galliprant	Metacam
For osteoarthritis in dogs	✓	✓	✓	✓
Oral liquid solution	✓			✓
Suited to longer term use	✓			
Cannabinoid-derived	✓			
Estimated Annual Revenue	NA	US\$130m	US\$52m*	US\$90m

*Only launched in 2017 .

Source: Various animal health Company presentations; Eli Lilly and Company financial reports; Speaker and/or CannPal disclaims any duty to update.

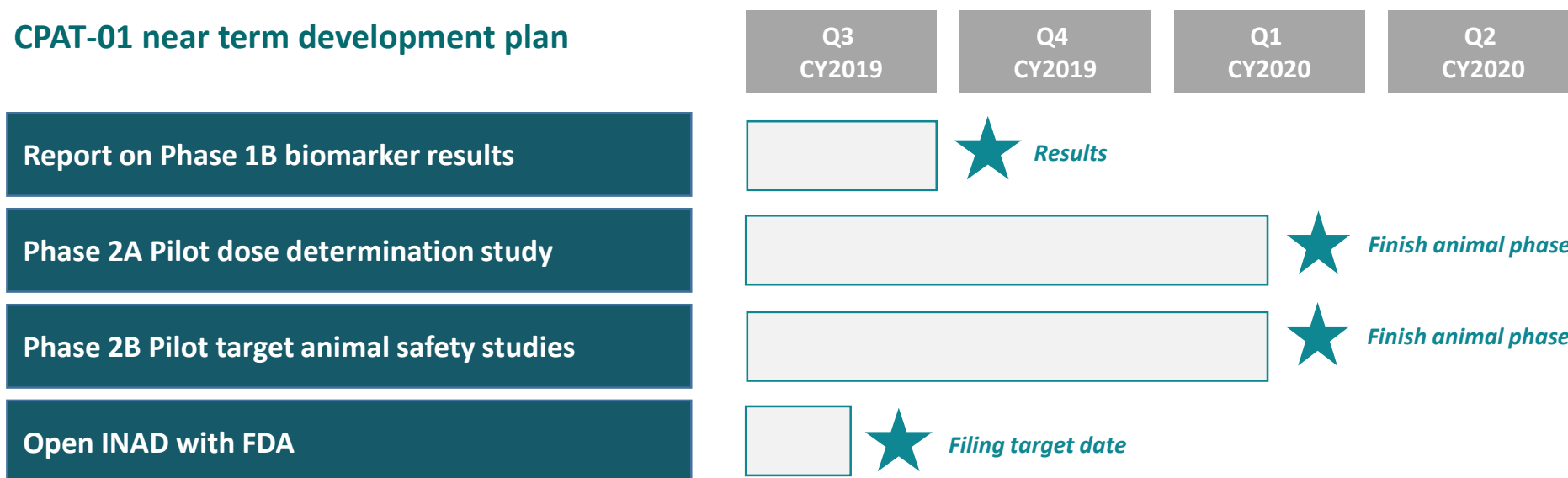
CPAT-01: near term milestones



The Company remains fully funded to complete upcoming pilot phase 2A and 2B studies

- ✓ 12 veterinary clinics across Sydney and Queensland have been confirmed for the Phase 2A pilot dose determination study, with dog recruitment expected to commence in July. Over 60 dogs with osteoarthritis are expected to be recruited for the randomized, placebo controlled, double blind study;
- ✓ Leading Canadian veterinary clinical research organization, Kingfisher, has commenced preparation for the Company's Phase 2B Target Animal Safety study (TAS) with the animal phase expected to commence in Q3 2019;
- ✓ The Company plans to file CannPal's first INAD (Investigational New Animal Drug application) with the Food and Drug Administration in Q3 2019, with the pre-submission meeting conference expected to take place shortly after.

CPAT-01 near term development plan



Nutraceuticals: overview



CannPal is developing nutraceuticals using compounds from the less regulated hemp plant, as part of an early revenue generation strategy

- ✓ DermaCann is CannPal's lead nutraceutical in development for skin health in dogs
- ✓ Hemp derived cannabidiol formulation, no THC
- ✓ Nutraceuticals aren't required to follow the same clinical trial pathway as pharmaceuticals
- ✓ A complimentary therapy to add to existing treatment plans for dogs with inflammatory skin conditions
- ✓ Consistent product quality: GMP/GLP approved, pharmaceutical quality manufacturing and supporting toxicology/safety data pack
- ✓ First to market benefits: only regulatory approved CBD-based nutraceutical product for dogs in APAC
- ✓ Developing a pipeline of other nutraceuticals

Estimated market size*	US\$1.5bn+
Regulatory Landscape	Complimentary Animal Health Product (CAHP) in Australia (and other regions where applicable)
Current status	Commenced Safety and Efficacy studies. Appointed Manufacturer
Commercialisation strategy	Multiple options including strategic partners for licencing opportunities
<u>Lifecycle strategy</u> <i>Develop additional nutraceutical products to build a broad portfolio</i>	

Note: OTC (over the counter); APAC (Asia-Pacific)

DermaCann: market positioning



DermaCann is being developed as a complimentary animal health product (CAHP) which could be used as an adjunct therapy as part of a multi-modal treatment program

DermaCann

- ✓ An OTC nutraceutical for canine skin health
- ✓ Estimated total nutraceutical market size of over **US\$690m** with 28% through vet clinics
- ✓ Adjunct therapies can complement pharmaceutical products as part of a safer multi-modal long term treatment plan
- ✓ Potential to capture pharmaceutical, nutraceutical and CBD market share



apoquele[®] (oclacitinib tablet)

- ✓ Market leading skin disease pharmaceutical for dogs for the control of pruritus associated with allergic dermatitis in dogs
- ✓ For moderate to severe disease
- ✓ Effective but with safety concerns
- ✓ Expensive
- ✓ **2018 annual sales of US\$500m**

MILD

MODERATE

SEVERE

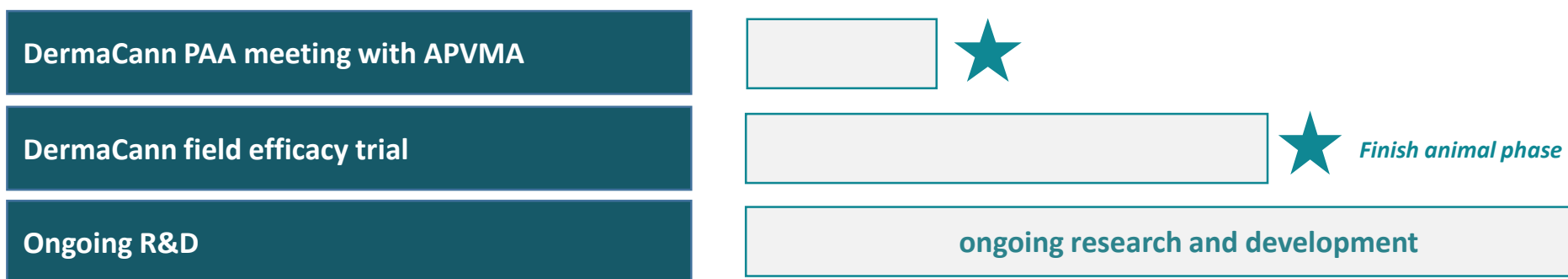
Disease progression

Source: Statista; various Company presentations and financial reports; Zoetis Press Releases

The Company is fully funded to complete the development of DermaCann for potential Australian/New Zealand veterinary registration

- ✓ Next major milestone is the field safety and efficacy study commencing in 2019
- ✓ 2 specialist dermatology clinics across Sydney and Queensland have been confirmed for the trial, with dog recruitment expected to commence in July. Over 30 dogs with skin disease are expected to be recruited for the randomized, placebo controlled, double blind study;
- ✓ The Company will be seeking CAHP (complimentary animal health product) Approval at the completion of the trial;
- ✓ A CAHP product approval would allow veterinarians to sell DermaCann to pet owners via prescription in Australia.

Nutraceutical near term milestones








Note:; APVMA (Australian Pesticides and Veterinary Medicines Association); PAA (pre application assistance)

Recent animal health transactions demonstrate significant value that can be realised as early as Phase 2 for a registerable animal health product



Date	April 2016	April 2017	Jan 2017
Value	US\$85m Includes upfront payment of US\$45m, ongoing royalties, milestone and KPI payments	US\$85m Represents an aggregate equity value - based on US\$6.72 per share	US\$61m Included upfront payment of US\$1.5m, ongoing royalties, milestone , KPI payments.
Phase of Drug	FDA Approval	Phase 3	Phase 2
Deal type	License	Corporate	Licence
Commentary	<ul style="list-style-type: none"> Elanco exclusively licensed the global rights to Galliprant from Aratana Galliprant is an FDA-approved therapeutic for control of pain and inflammation associated with canine osteoarthritis 	<ul style="list-style-type: none"> Nexvet is a biologic therapeutics company developing monoclonal antibody therapies for companion animals to treat chronic pain Nexvet's lead drug candidates were at Phase 3 at the time of takeover 	<ul style="list-style-type: none"> Jaguar developed canalevia for chemotherapy-induced diarrhoea from the <i>croton lechleri</i> tree Similar to CPAT-01 as a botanical in development for FDA approval Jaguar also received reimbursement for certain development expenses

CannPal has a comprehensive strategy in place to optimise shareholder value

 Establishment	Establish unmet needs in animal health, where current treatments are inferior (due to cost or side effects)	✓
 Identification	Identify drug candidate(s) – with a focus on cannabinoids that have shown efficacy and safety tolerances in human models	✓
 Validation	Clinically validate drug candidate(s) in target animal species through well-controlled clinical studies with GMP/GLP-approved clinical research organisations	<i>In progress</i>
 Development	Develop validated drug candidate(s) into novel medicines with innovative and bio-available delivery systems with proprietary intellectual property	<i>In progress</i>
 Commercialisation	Active management of product portfolio and aligning with strategic partners (i.e. out-licence model for marketing and regulatory approval after the completion of clinical trials)	<i>In progress</i>



Appendix



Layton Mills *Founder/ Managing Director*

- Experienced FMCG entrepreneur with over 10 years spent in brand and product development, particularly in mainstream grocery channels;
- International Business Experience with the ACT Government;
- Launched a number of consumer goods brands in the Australian Market.



Geoff Starr *Non-Executive Chairman*

- 32 years' experience building and transforming businesses in household, food, chemical, agribusiness and pet care: 9 years in senior executive roles at MARS Global Pet care; 13 years in Asia, 10 years global experience, including USA and Europe;
- Executive positions including, Unilever, George Western Foods.



Max Johnstone *Non-Executive Director*

- 11 years as President, Chief Executive Officer and Executive Director of Johnson & Johnson Pacific;
- Extensive overseas experience in leading businesses in both Western and Central-Eastern Europe, Africa as well as Asia- Pacific;
- Board positions on a number of highly regarded ASX listed Companies.



Dr Kate Adams *Non-Executive Director*

- Co-owner of Bondi Veterinary Hospital and Founder of tech startup, Thankly;
- Held senior leadership roles for the Federal Attorney-General's Portfolio including as Analyst, Principal Adviser and Chief of Staff for a number of Royal Commissions;
- Bachelor of Science, Masters of Data Analytics, Bachelor of Veterinary Medicine and Surgery.



Robert Clifford *Non-Executive Director*

- Over 20 years of experience in Brand implementation and Business Strategy and Planning
- Senior leadership roles in large multinational private and public corporations in Australia, China and Ireland
- Former President of the Irish Australian Chamber of Commerce



Dr Margaret Curtis: *Head of R&D*

- Qualified veterinarian with 17 years' of director experience with market leading animal health company, Elanco;
- Contributed to the development of animal health products for Elanco globally;
- Has gained approval for over 20 drugs in over 100 countries;
- Lead global teams across Australia, USA, Europe, Asia and Latin America.



Dr Jeffrey Sherman: *Lead Toxicology*

- Board certified senior Toxicologist with in depth knowledge of VICH GLP and GCP
- Diplomat of the American Board of Toxicology with extensive experience in risk assessment, FDA regulations and veterinary medicines
- Local, state, federal and international jurisdiction legislative experience



Kevin Willard: *Senior Formulations Chemist*

- Expertise in formulation development, processing (clinical trial manufacture and technical transfer) and GMP Quality;
- Specialised in CMC (Chemistry, Manufacturing and Controls) technical writing;
- 34 years of experience working with market leading Elanco Animal Health and Eli Lilly



Baden Bowen: *Chief Financial Officer and Company Secretary*

- 30 years experience as a chartered accountant specialising in ASX listed Companies
- Highly skilled in Company secretarial duties and Corporate Governance
- Bachelor of Commerce, Accounting and Finance



Mara Gordon: *Medical Cannabis Adviser*

- Founder of Zelda Therapeutics, Aunt Zelda's and Calla Spring Wellness
- Specialises in the development of treatment protocols utilising Bio Pharmaceutical grade cannabis extracts for seriously ill patients



Dr Ted Whitem: *Commercial Veterinary Adviser*

- Former Head of School at the Melbourne Veterinary School;
- Former Chairman of the Examination Committee of the American College of Veterinary Clinical Pharmacology;
- 7 years as the head of R&D with Jurox Animal Health, bringing over 30 products to market.



Dr Rayson Tan: *Chief Scientific Officer*

- Experienced veterinary consultant with a PhD in veterinary oncology, BVSc in veterinary medicine and surgery and BSc in veterinary research;
- Currently serves as the regulatory and ethics executive for the Garvan Institute of Medical Research and is exceptionally proficient in biomedical and veterinary science.



Amanda Reiman: *Cannabis Regulatory Adviser*

- Former Manager of Marijuana Law and Policy at the Drug Policy Alliance, California
- Worked to develop the DPA's marijuana reform work relating to litigation, legislative drafting, campaign strategy and policy advocacy in state, federal and international jurisdictions

The material in this presentation has been prepared by CannPal Pty Ltd ACN 612 791 518 (CannPal) and is general background information about CannPal's activities current as at the date of this presentation. This information is given in summary form and does not purport to be complete.

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Thank You