AKRETIV Animal Health Inc.

Life Sciences' Outsourced Veterinary Division ™

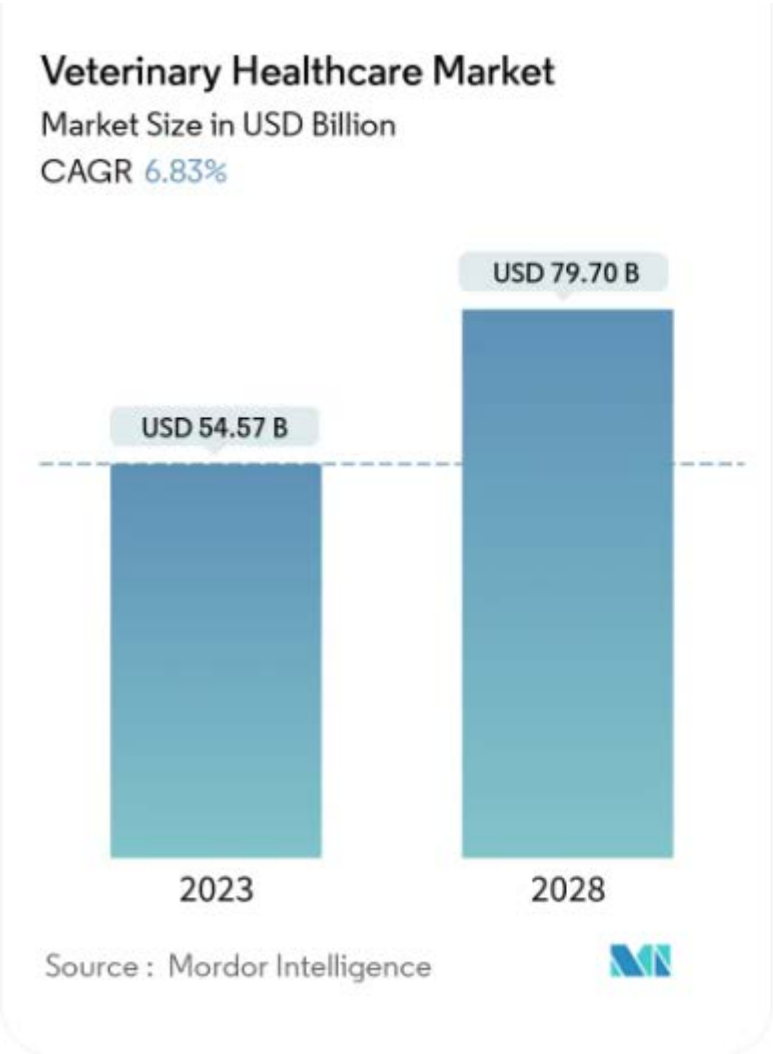
Version 060925 Summary

www.akretivAH.com

Mission Statement

Develop innovative products for animal health sourced from partially derisked human health development pipelines by offering a unique **partnered program** model that brings accretive financial upside, significant translational insights and manufacturing regulatory validation to human life sciences companies.

Companion animals market size (>$50B)

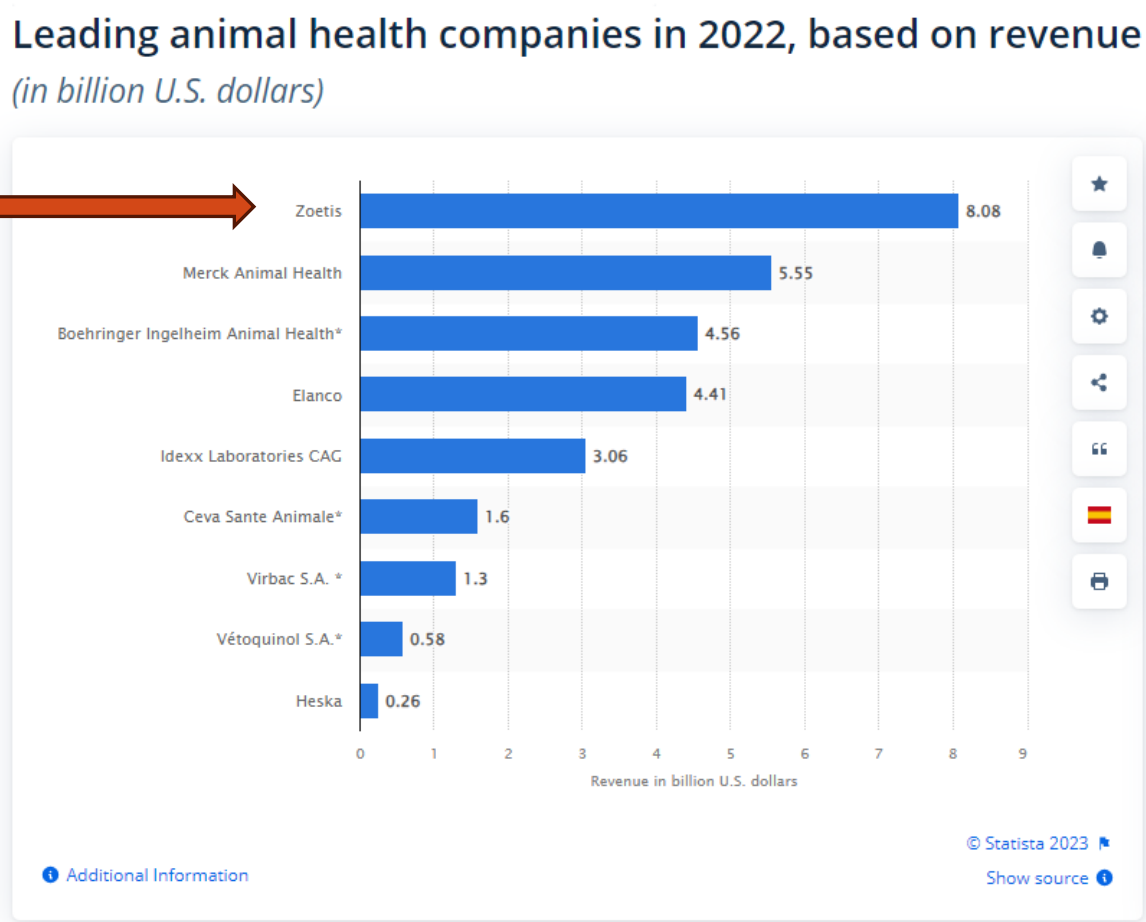


Study Period	2019-2027
Market Size (2023)	USD 54.57 Billion
Market Size (2028)	USD 79.70 Billion
CAGR (2023 - 2028)	6.83 %
Fastest Growing Market	Asia-Pacific
Largest Market	North America

Major Players

*Disclaimer: Major Players sorted in no particular order

Value of Veterinary divisions to Human Pharma …



- **Zoetis (used to be Pfizer AH)**
  - **$8B Sales**
  - **$75B Market Cap**

- **Still owns Merck AH**
- **$5.5B sales for 2022**
- **10% of Merck total sales**
- **Growth 6%**

Human Life Sciences companies not leveraging Animal Health opportunities are missing significant accretive profits.

Animal Health Program Valuation at/prior to Approval (NADA)

- **Animal Health blockbusters @ $100M+**
- **Deal inflection points (later stages most valuable)**
  - Most animal health products only become marketable assets once pivotal studies are completed (usually 1 to 2 years prior to a regulatory approval)
  - Early development deals are usually valued at single digit $M upfront + development cost reimbursement + low double-digit royalties on future sales (mediocre terms by human life sciences standards).
  - Approved marketable assets can get valuations around **$50M to $100M**.
- **Comparable Deals in animal health (exit late-stage values)**
  - Aratana, Galliprant (NSAID) deal = bought by Elanco for $234M cash
  - Zoetis acquired Nexvet Bio (immunotherapeutics in late stage) for $85M
  - Kindred Biosciences ($450M deal) for Mabs in late development (derm, parvovirus, pain)

Animal health is still "small" if compared to human healthcare … but significant value to be leveraged!

Animal Health Market Summary

- Animal Health Recession Resistant
- CAGR of 4.5% (2012-2022), projected to be around 7% for the next decade
- Market Expected continue steady growth to reach $70B by 2030
- Core Markets: Pain, Dermatology, Metabolic Diseases, Oncology
- 10 to 15 years behind human healthcare for innovation …

Most common medical conditions for cats and dogs (2021 US/Canada)

Dogs	Cats
Otitis / Ear Infection	Urinary Tract Infection
Gastroenteritis	Diabetes
Diarrhea	Gastroenteritis
Skin Conditions (Infections, Allergies, Mass)	Otitis / Ear Infection
Urinary Tract Infection	Diarrhea
Vomiting / Emesis	Kidney Disease / Renal Failure
Allergies	Upper Respiratory Infection
Arthritis	Vomiting / Emesis
Dermatitis	Conjunctivitis / Eye Condition
Cruciate Ligament	Inflammatory Bowel Disease
Lameness	Hyperthyroidism

Source: NAPHIA State of the Industry Report, 2022 © - May 16, 2022

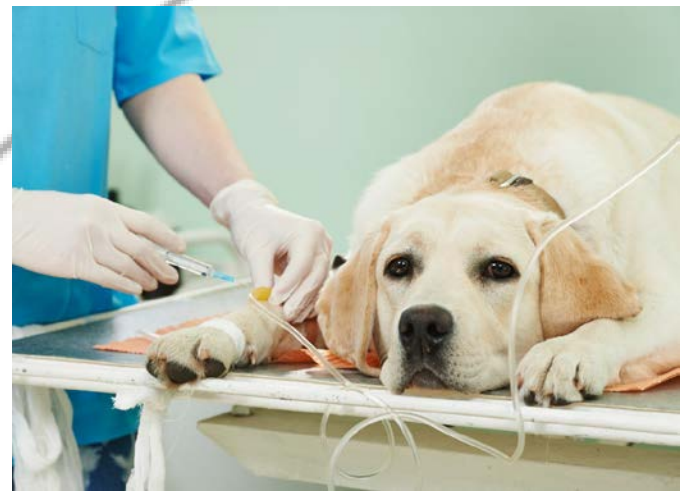
Translational Pet Population and Target Diseases

- Very **few companies have utilized the naturally occurring diseases in pets for translational acceleration** of their programs (historical bias to rodent based disease models for drug screening)
- **Current team has proven pet trials can be used to accelerate human drug development** and pilot new indications in parallel overall de-risking platform therapeutics programs
- Enormous **untapped opportunities for human and animal health synergistic drug developments** ("One Health" concept).
  - One Health Basics | One Health | CDC
  - Cross-cutting Topics: One Health Initiative | FDA

Translational patient populations

Pets are part of the family
(share our environment and lifestyle)

Pets are living longer
(Naturally Occurring Diseases)

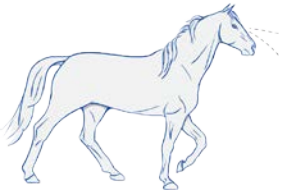


Owners are willing to enroll their pets in clinical trials to improve their quality of life

US Cared For Pet Patient Population

84 million canines

70 million felines



7.6 million equines

$35.9B spent on Vet Care and Therapeutics (US)

Source: AVMA Pet Demographics 2020, FDA CVM estimates, APPA Pet Owner and Demographic Survey

Most diseases that affect People can be found in Pets …

Example of Target Diseases of Interest	US Pet Patients
Canine Osteoarthritis & DJD (Degenerative Joint Disease)	5,911,230
Canine KCS (Keratoconjunctivitis Seca)	4,126,200
Canine CKD (Chronic Kidney Disease)	2,242,500
Canine Atopic Dermatitis	1,794,000
Canine ACL rupture (cruciate ligament)	747,500
Canine Diabetes	448,500
Canine IBD (Inflammatory Bowel Disease)	224,250
Canine Bone Cancer	125,580
Feline CKD (Chronic Kidney Disease)	2,336,000
Feline DJD (Degenerative Joint Disease)	1,168,000
Feline IBD (Inflammatory Bowel Disease)	876,000
Feline Gingival Stomatitis	876,000
Feline Cystitis	730,000
Feline Diabetes	408,800
Equine Osteoarthritis	510,000
Equine Uveitis (immune)	340,000
Equine Tendon & Ligament tears	340,000
Equine navicular syndrome	204,000
Equine Laminitis	170,000
Equine EIPH (Exercise Induced Pulmonary Hemorrhage)	142,800

Non-exhaustive list of conditions and associated pet target populations.

6M dogs diagnosed with cancer each year (US)
2M treated beyond palliative conservative care

Veterinary Cancer Registry Diagnoses, Dogs

	# of cases	% of total cases
Mast Cell Tumor	910	13.22%
Lymphoma	573	8.32%
Melanoma	363	5.27%
Hemangiosarcoma	322	4.68%
Osteosarcoma	318	4.62%
Squamous Cell Carcinoma	281	4.08%
Fibrosarcoma	242	3.51%
Mammary Tumor	145	2.11%
Transitional Cell Carcinoma	141	2.05%
Thyroid Tumor	78	1.13%
Histiocytoma	47	0.68%
Basal Cell Tumor	16	0.23%

Registry effort (academia) to collect and type on self-reported cases (2,000 registered).

Source: Multiple Literature References and Market Research Reports

We are creating a uniquely synergistic model for the future!

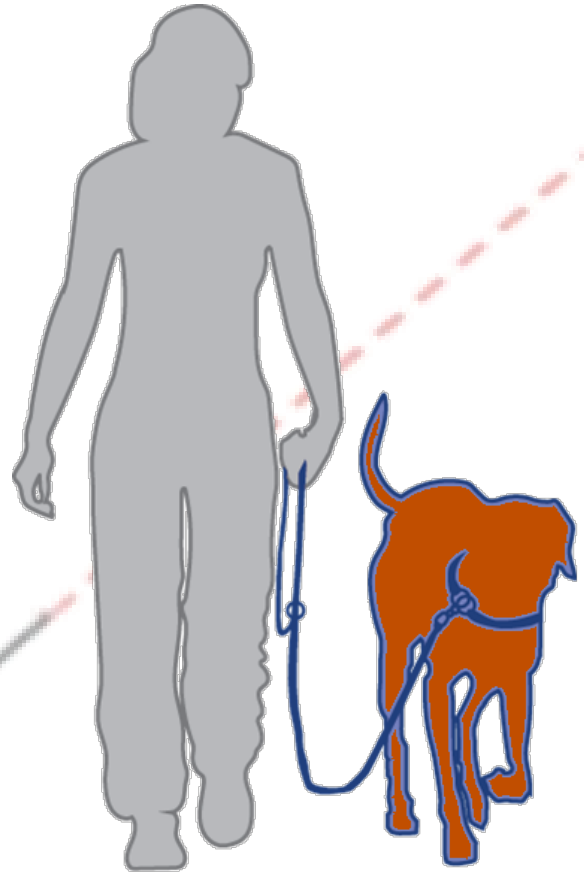
Strategic Partners → ***Investment Partners*** → ***TARGET CLIENTS***

Human Life Sciences (Pharma/Biotech/Devices)

+

AKRETIV Animal Health

Life Sciences' Outsourced Veterinary Division ™.



zoetis

ELANCO

Ceva

Virbac

vetoquinol
ACHIEVE MORE TOGETHER

MERCK
Animal Health

Boehringer Ingelheim

ourofino
saúde animal

Business Model (value proposition)

- **Accretive value for life science companies**
  - Financial upside from animal heath sales
  - Translational insights from animal studies
  - Early regulatory feedback on manufacturing (CMC)
- **Partnering model allows life science companies**
  - To retain control over IP
  - To retain control over manufacturing
  - Financially de-risked access to animal health
- **Akretiv (and Akretiv investors) get value from innovative, partially derisked assets developed under exclusivity for animal health.**
  - *Peak financial upside generated at program completion with exit deals (cash at licensing/distribution agreement with strategics and royalties on sales) add to a streamlined cost structure.*

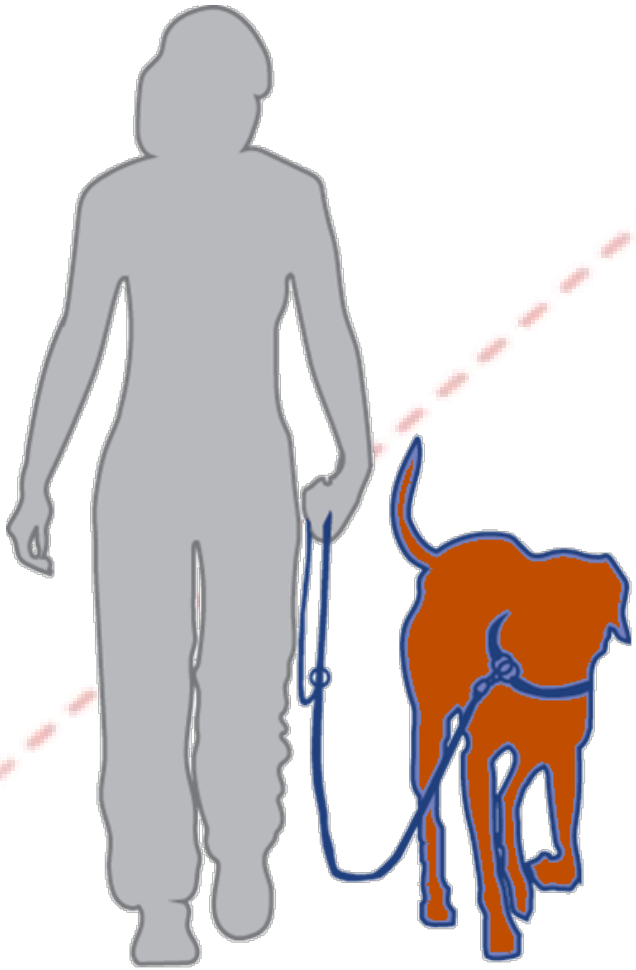
Win/Win Life Science Partnered Model

Human Pharma/Biotech

Accretive Profits
Translational Insights
Faster Time to Market (vs human)

Retain Control over IP
Oversight over Development (Steering committee)

Excellent ROI (profit-sharing model and alternative financing for equity)



AKRETIV AH

Dedicated animal health expert team

Established relationships with animal health pharmaceutical companies (distribution deals, strategic exits)

Network of investors to support efficient funded development

Value created through commercial royalties of approved animal health drugs (or licensing exit)

Accretive value creation between human and animal health industries

We addressed the Most Common Human Companies Concerns

What About?

AE (Impact of a bad Adverse Event in Pets to Human Program)

Safety studies to toxic levels are done in multiple animal species (rodent and non-rodent) for all drugs. Species have different metabolic pathways. FDA doesn't analyze animal health AE reports beyond animal health use. No impact to human development programs.

Price (How a lower selling cost in AH might be perceived)

Many drugs (parasiticides and generics) co-exist in human and animal health at different price points. Drugs labelled for veterinary use do not cross-over to the human field. Medical professionals and payers know drug development cost versus manufacturing cost. Alternate formulation for animal health is possible but not recommended (sub-optimal scaled approach).

Might distract teams from current human program for a small upside opportunity (in comparison)

Animal Health drugs can generate upwards of $100M per year (blockbuster). Cash business (insignificant penetration of pet insurance). Pets are part of the family (and owners pay for quality care). No distractions for human asset development (outsourced model where Akretiv team handles the work)

Exit (Having a license for Animal Health might turn-away a prospective buyer)

Every licensing agreement incorporates an "exit prior to NADA" (animal health approval) clause. In case of change of control in the partner Biotech and if the acquirer decides they do not want to see the drug registered for animal health use, they have an option to cancel the licensing deal (provided they agree to a penalty in return for years of development and investment in the technology).

Partially Derisked Partnership Deals take 12-18 months to secure!

- **CDA** in order to initiate assessment (towards letter of intent)
- **Data room access** (preclinical and manufacturing data) in order to assess the human asset program gaps for animal health commercial readiness
- Positive review –> discuss **option** and **licensing** terms
- Proceed to Letter of intent (non-binding term sheet)
- Program Development Plan (market, development timelines, regulatory, CMC)
- Program Financing Plan
- **Option Agreement**
- (Execute Proof of Concept Studies)
- **(Licensing Agreement)**
- (Initiate Full Asset Development and Registration Program)

Animal Health "Traditional" Deal Structure vs. Akretiv Partnering Model

	TRADITIONAL (Out-Licensing)	PARTNERED*	OUTSOURCED (Contracted)
Cash Upfront	$0.5M - $1.5M	No	No
Royalties (Net Sales)	5% to 8%	10% to 15%	Expect 30% on distribution deal (minus AKR 10%)
Milestone Payments	Approval Sales Milestones	20% of BD Deal	100% BD Deal (minus AKR 10%)
Development Cost	$0	$0	$5M to $8M + AKR fees (20%)
Financing Cost	No cost (AKR funded)	No Cost Or Interest only	100% funding by client
ROI Conservative (25M/Y Product)	$2M + $1.5M/Y	$3M/Y	$7.5M/Y
ROI on asset sale ($75M asset value)	$2M upfront $10M asset sale	$15M	$60M
ROI Blockbuster ($100M/Y product)	$2M to $10M + $5M/Y	$12.5M/Y	$20M/Y

** Partnered model on post-IND therapeutics with or without financing provided by Life Science partner is the Akretiv preferred agreement format, as we believe it balances risk and rewards fairly and provides significant more upside than traditional out-licensing deals*

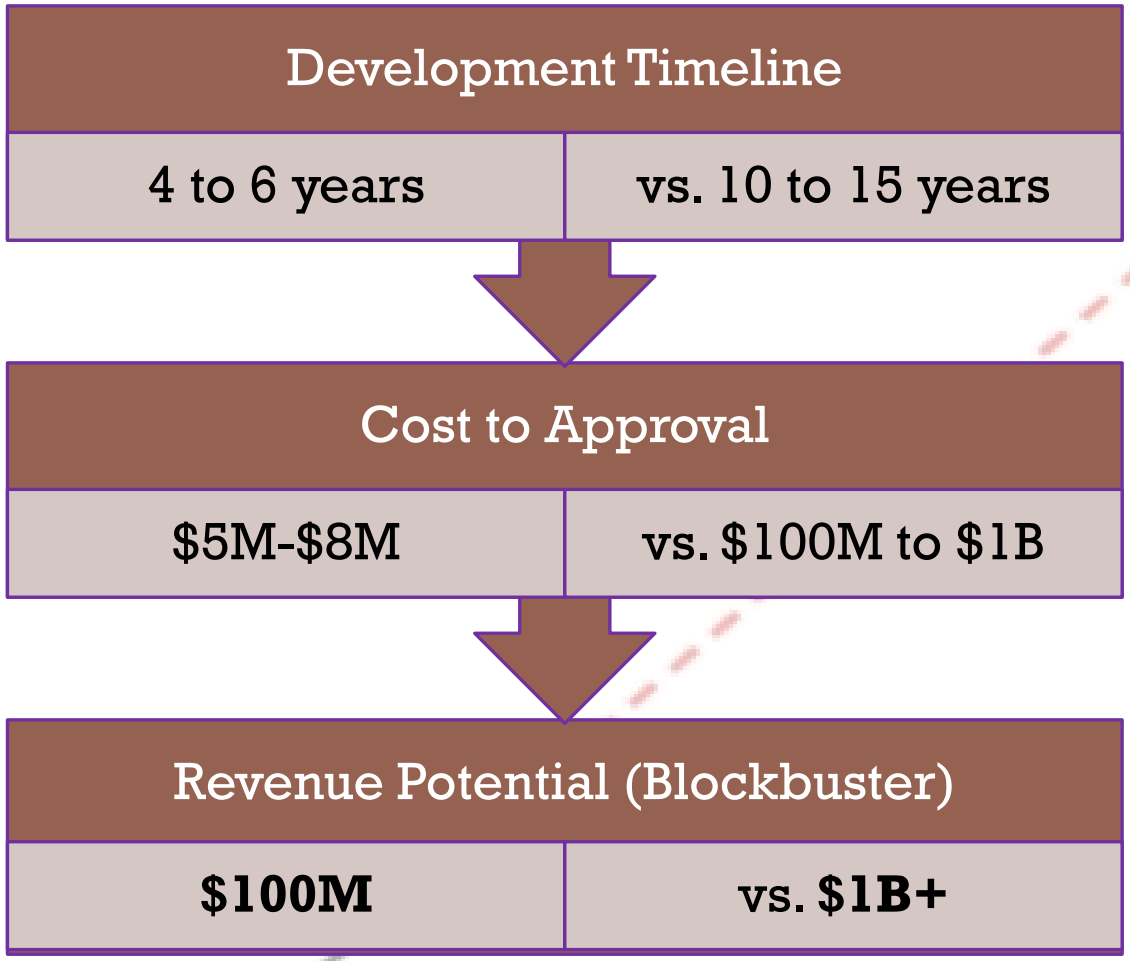
Competition

- **Only one similar company** (to our knowledge) focuses on a human <> animal health synergistic business model (based in Europe).
- Some companies try to bring human programs into animal health (monoclonal platform, small molecule drugs) through large pharma (parent company) pipeline or as **focused single program start-ups**.
- Companies working on translational programs are more focused on in-licensing than partnered development or profit-sharing structured deals.
- The proposed model **brings accretive value to both partners while offering a risk mitigation approach** (convertible loan funding) to human partner company

Opportunities

- Great potential to maximize drug value by pursuing human and animal health markets in parallel
- Streamlining (reduction of costs of goods at scale) through shared manufacturing capabilities for human and animal health applications
- Translational studies can bring unique insights to human drug development that accelerates moving through clinical stages and improves the quality of the clinical data generated
- Budgets required for animal health developments are a fraction of the cost for human drugs (the return for the risk is much less)

Animal vs. Human Drug Development



- Faster Path to Market (AH vs HH)
- Lower Development Cost
- Accretive Revenue shared with HH company (in our model)
- Clinical Insights Applicable to Pre-NDA Programs can accelerate HH drug development

Most conservative evaluations (de novo programs). Programs starting with existing toxicology data and/or CMC for human assets can likely be taken to NADA approval (US) in 5 years or less, and for a cost at or below the listed $5M (alternative pathways, conditional approvals)

Regulatory Pathway for Animal Health Therapeutics (FDA CVM)

Regulatory Activities	CVM activity
CMC	TS CVM review
INAD	Initial data preparation for A0000 CVM submission
	Categorical exclusion (environmental impact)
	Obtain INAD number
Z Meetings	CVM meetings (PSM or protocol)
Safety (target species)	TASS protocol review (assumes 2 reviews)
	TAS TS CVM review (assumes 2 reviews)
Effectiveness (target species)	H-Submission outcome
	Pivotal protocol review (assumes 2 reviews)
	TAE TS CVM review (assumes 1 review)
	Administrative review for full approval
Minor Technical Sections	CVM review

- Studies done in target species streamlines clinical study path
- Clinical insights can be gathered from pilot studies in months not years (vs HH)
- Rolling submissions for animal drugs allows for human CMC adjustments early in the cycle (manufacturing insights)

Pipeline

- **First Options Secured.**

AKT-100 Immune Stimulant for prevention of secondary bacterial infections in pets.

AKT-200 (Pain Control) secured API exclusivity for animal health applications.

- **Other Options in Progress.**

Multiple outreach efforts to expand pipeline of opportunities.

Pipeline detailed overview including product presentations and market assessments available under confidentiality agreement (separate document).

CORE Programs

PROGRAM	Therapeutic Area	Core Indications	Mode of Action
AKT-101 (optioned)	Immune-Stimulant	Prevention of secondary respiratory infections in dogs and cats	Oral bacterial lysate triggers non-specific immune response strengthening immune system against infections.
AKT-201 (internal)	Pain and Inflammation	Feline Gingivostomatitis + Equine Navicular Dx	Potent TRPV1 agonist defunctionalizes targeted nerves at site of injection interrupting pain signaling (non-opioid)

Details available to interested investors under CDA (separate presentation)

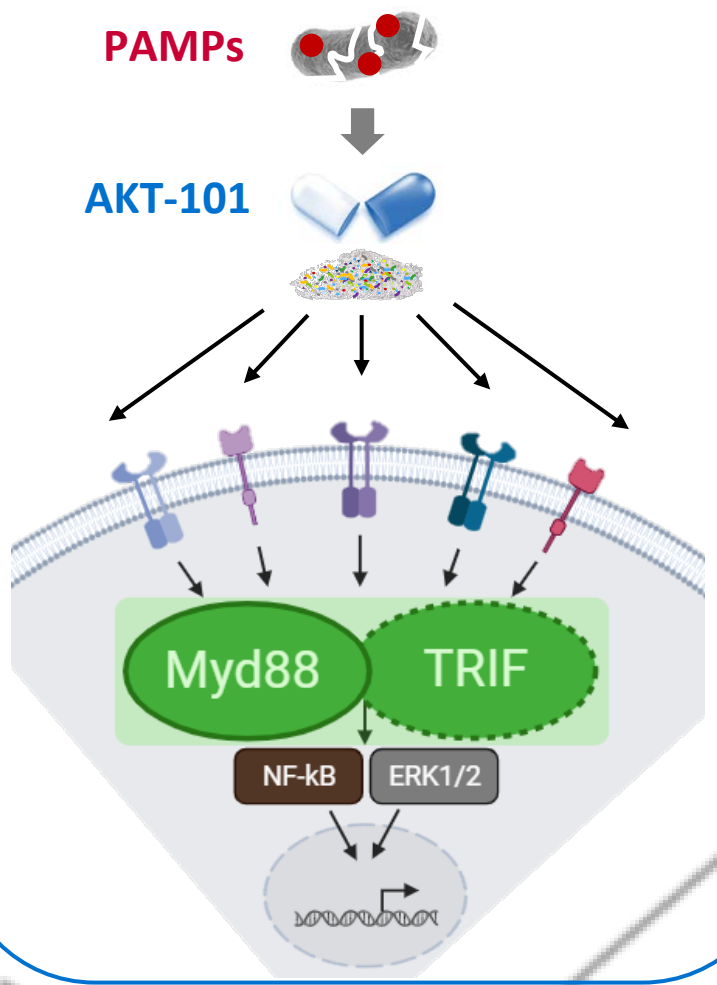
AKT-101 for animal health

(BACTYLIS)

Derisking Elements:

Commercialized in 40 countries (human application)
GMP manufacturing (Europe)
Preclinical rodent model clinical data
Human clinical data

Mode of Action



Oral Bacterial Lysate:

- **Primes** the host immune system against pathogens
- Prevents **RTIs and control airway lung inflammation**
- Prevents **bacterial-induced morbidity/mortality** following **Influenza**

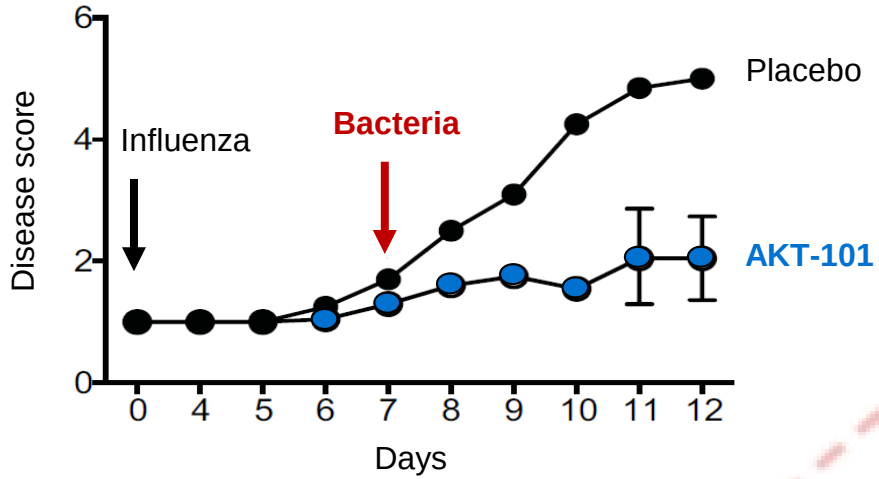
Efficacy and MoA primarily based on :

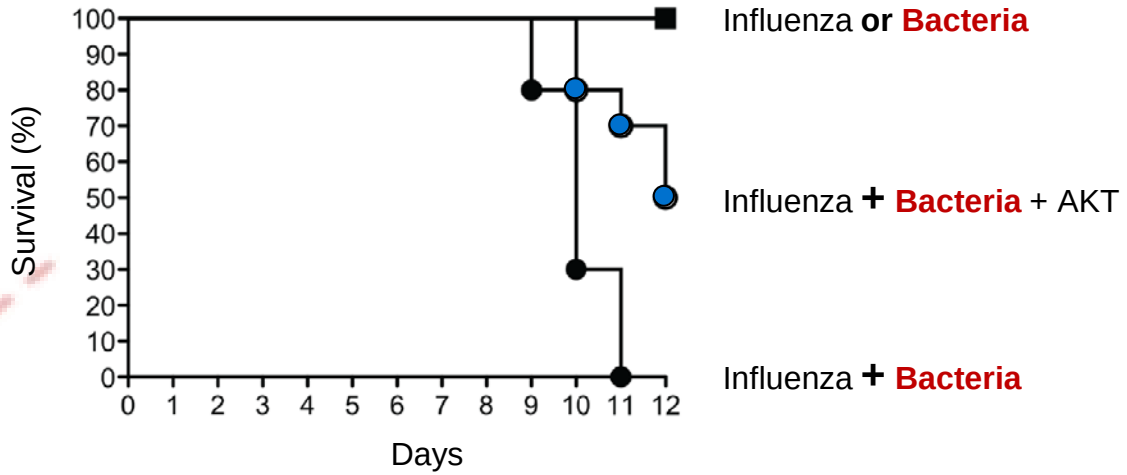
- Targeting multiple receptors including TLRs[1] via **Myd88/TRIF** signaling
- **Activating molecular drivers** from type I IFN[2] pathway (IFNAR1, IRF7, IFNA-B)
- Inducing **polyclonal cellular and humoral antimicrobial** immune responses
- Modulating **primarily myeloid and lymphoid cells responses**
- Controlling **inflammation**

TLRs : Toll-Like Receptors

Protective anti-bacterial activity (secondary gram +/- challenge)

Prevention of morbidity and mortality after bacterial superinfection





Publication available on request

AKT-101 Feline Upper Respiratory Disease (FURD) Opportunity

70M cats receiving annual Veterinary Care (US only; 140M US/EU)

Study/Source	Prevalence/Incidence	Context	Key Findings
Binns et al. (2000)	10-20%	General veterinary visits	Viral infections like feline calicivirus and herpesvirus were significant contributors to URT cases.
Radford et al. (2009)	30%	Shelter populations	Stress and high density in shelters led to higher rates of viral URT infections.
Gourkow & Phillips (2014)	15-30%	Shelter-based study	Stress reduction and human interactions lowered URT prevalence in shelter cats.
Bannasch & Foley (2005)	Variable (~10-25%)	Feline shelter and community populations	Pathogens like feline herpesvirus and Chlamydia psittaci were common in cats with URT symptoms.

VET VISITS

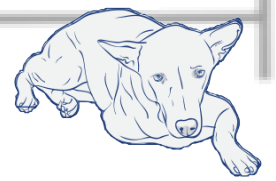
6%

- **Over 3.5M Cats per year in the US visit a veterinarian for respiratory issues (not counting cats in shelters)**

With 150,000 treatments (at $200 veterinary cost) per year, the product would generate about $30M in US sales.

AKT-102 Canine Infectious Disease Respiratory complex (CIDRC) Opportunity

84M cared for dogs receiving annual Veterinary Care (US only; 128M US/EU)



Study/Source	Prevalence/Incidence	Context	Key Findings
Murphy et al. (2012)	12-15%	General veterinary visits in Ontario, Canada	URT diseases included tracheobronchitis and infectious causes in canine patients.
Radford et al. (2009)	8-15%	General veterinary populations	Infectious tracheobronchitis ("kennel cough") was a common condition among presenting dogs.
Engdahl et al. (2023)	20-25%	Brachycephalic breeds in Swedish populations	Breeds like Bulldogs and Pugs were disproportionately affected due to anatomical predispositions.
Johnson (2010)	Variable (~10-20%)	Mixed breed studies	URT inflammation included viral and bacterial causes; Brachycephalic breeds were at higher risk.

VET VISITS

2%

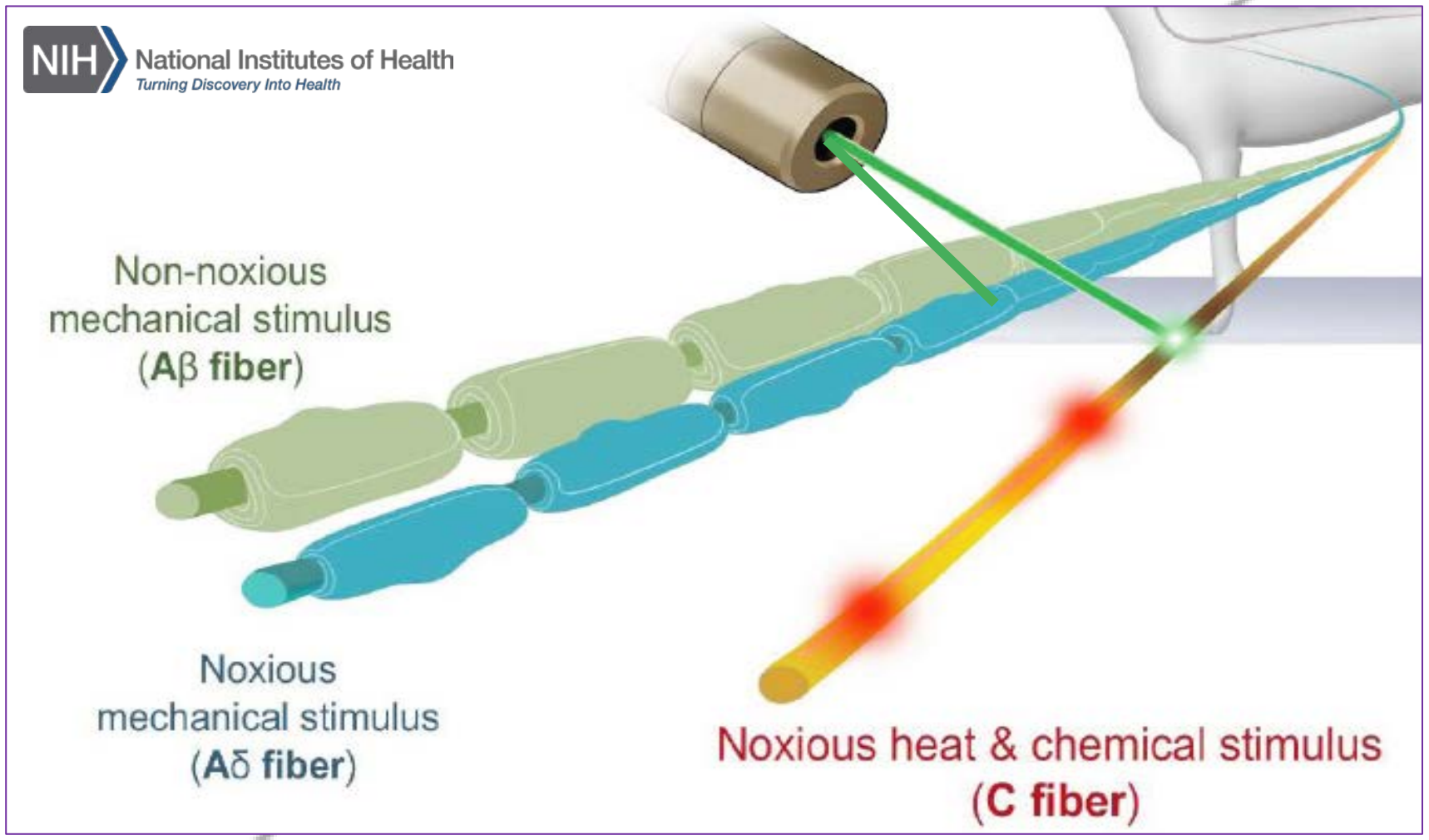
- **Over 2M Dogs per year in the US visit a veterinarian for respiratory issues (not counting dogs in shelters)**

With 100,000 prescriptions (at $200 veterinary cost) per year, the product would generate about $20M in sales.

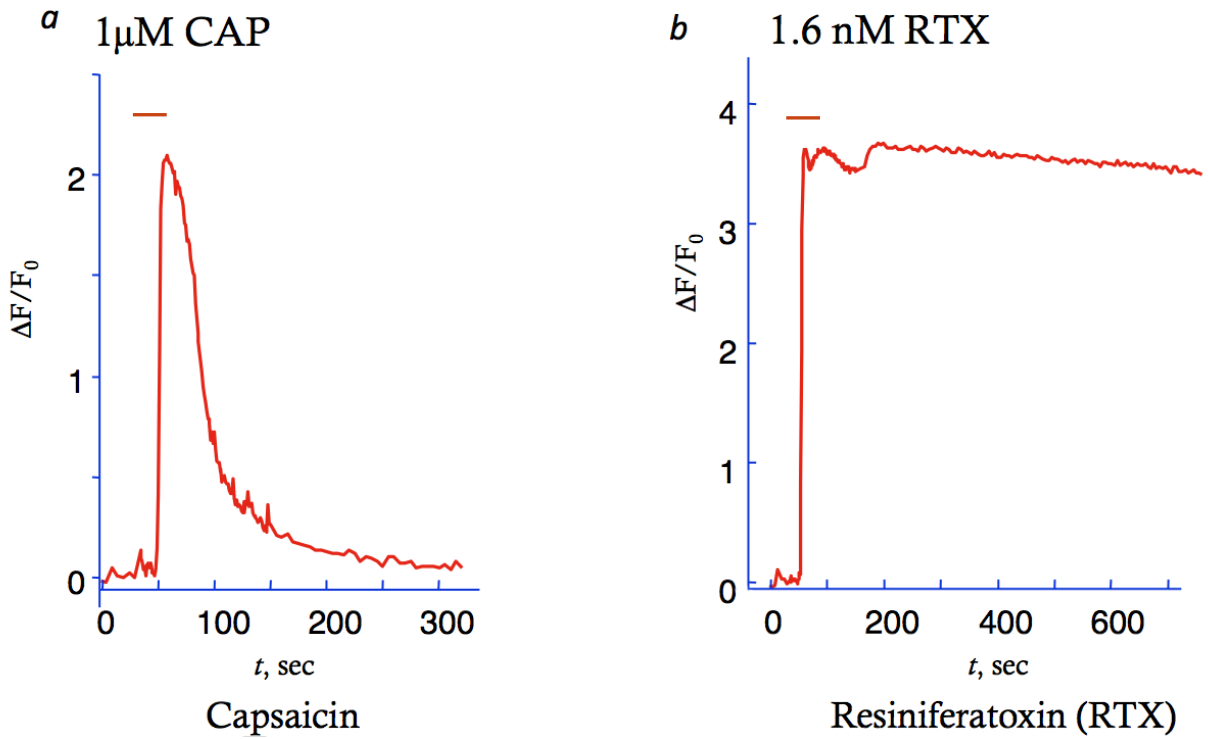
AKT-200 (Neuroclastin)

Potent TRPV1 Agonist for neural pain and inflammatory signalling modulation

Exquisite targeting of inflammatory pain signaling



Strong channel activation & progressive depolarization (vs CAP)



Resiniferatoxin can maintain the TRPV1 channel open for more than 20 min while capsaicin has a short channel open time.

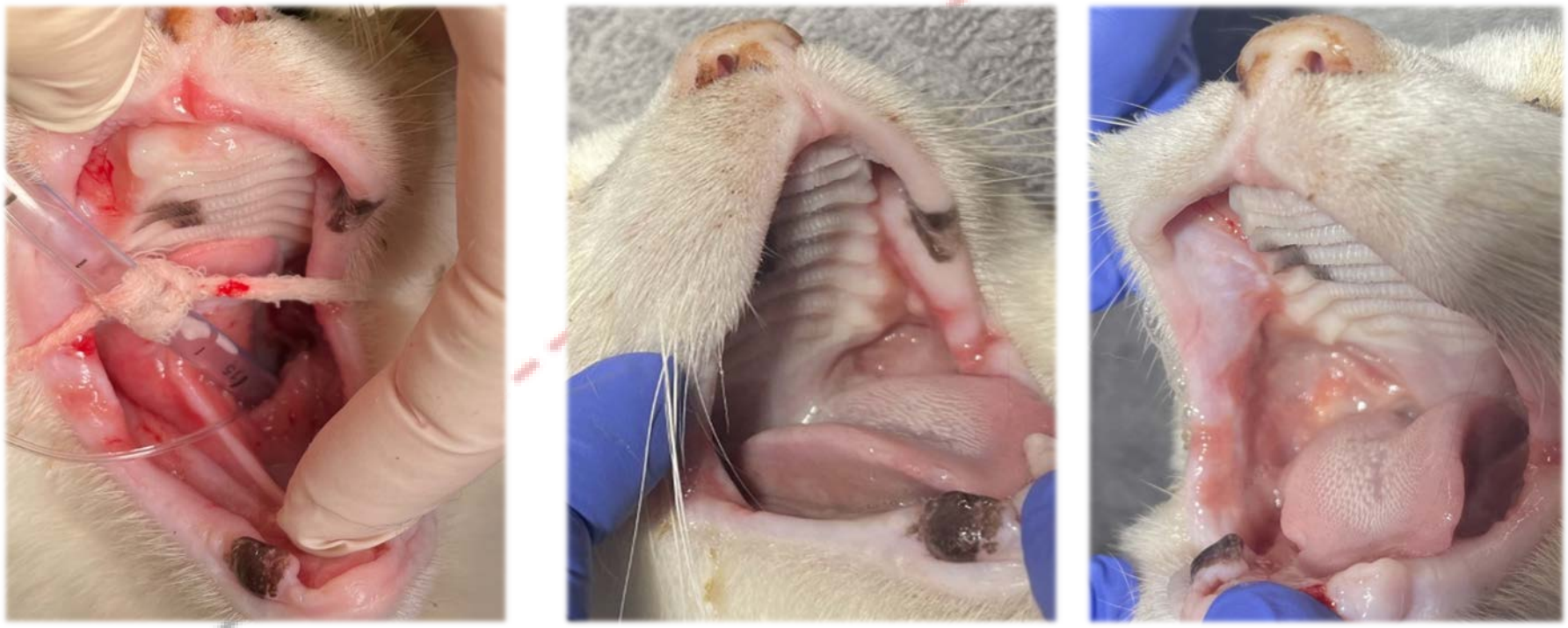
Fiber depolarization is more progressive for RTX than for CAPS.

RTX is more effective at desensitizing fibers than activating them (opposite CAPS)

Feline Gingivostomatitis Proof of Concept Study (Published)

25 enrolled cats
Topical RTX application to oral mucosa at 6.25, 12.5 or 25 µg
No adverse events and most cats have responded well by 28 days at all doses

Day 0 **Day 28**



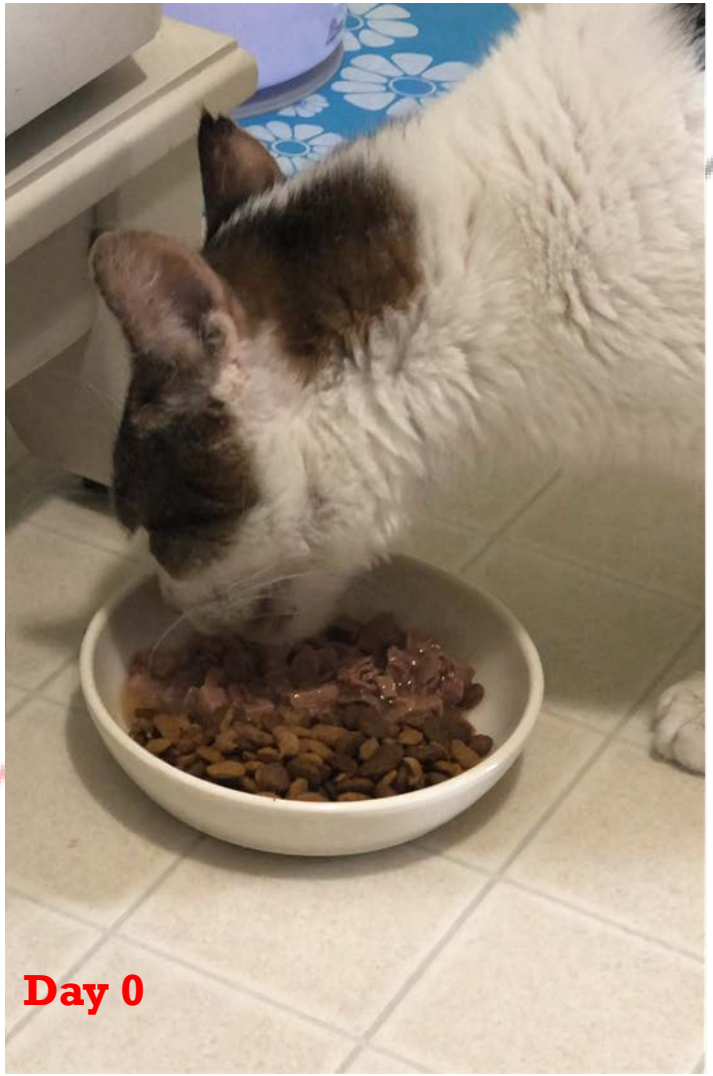
PUBLICLY DISCLOSED INFORMATION

Pre & Post treatment (Illustration)

- Assessment
  - Difficulty eating dry food on Day 0 vs Day 28
  - Favoring wet food on Day 0

- Some local transient discomfort lasting up to 24h. Post-treatment
- Some transient decreased appetite lasting up to 24h. Post-treatment

Most Cats were eating normally 30 minutes after waking up from anesthesia!



PUBLICLY DISCLOSED INFORMATION

AKT-201 Feline Stomatitis Market Opportunity

90M cats receiving annual Veterinary Care in top markets (70M US only; 130M US/EU/Latam)

> 3M Pets with condition

Early Stage
- Pain management (steroids, NSAIDS)
- Immune modulators

Moderate to Severe Dx
- Full dental extraction
- 60% success rate

Refractory (Crippling)
- No options.

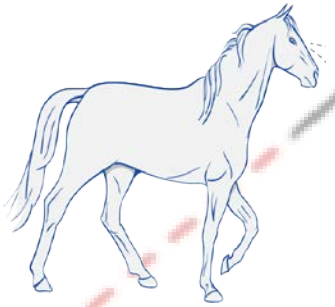
Euthanasia

> 150,000 beyond available options

450,000 needing specialized treatment

$37.5M / year (at minima)
= $250 per treatment * 150,000+ patients / year
Potential to become oral pain blockbuster (>$100M/year)

AKT-100 – Addressable US Pet Patient Population by Pain Indications



Canine Patients		Feline Patients		Equine Patients	
Bone Cancer	115,000	Idiopathic Cystitis	910,000	Navicular Syndrome	495,000
Pain from advanced OA	1,780,000	Gingivo-Stomatitis	450,000		
Moderate to Severe Joint Pain	16,500,000				
Post-Surgical Pain Control, Bladder Pain, Dry Eye, Dental Pain.		*Post-Declaw Maladaptive Pain, Post Surgical Pain Control Wound Pain.*		*Arthritis Pain, Laminitis, Corneal Ulcer Pain, Dental Pain.*	

Product Potential

5M patient candidates @ $250 / treatment Addressable market potential of **$1.25B**

3% penetration
150K treated patients
$37.5M gross sales

Y3 US Sales $75M (250K+ treatments)

Y5 Global sales (all species, all indications) potential over $180M per year

Advanced Option in Discussions

PROGRAM	Therapeutic Area	Core Indications	Mode of Action
Not Assigned (in negotiation)	Antiviral	Broad Spectrum antiviral against respiratory pathogens	TLR7-agonist
Not Assigned (in negotiation)	Weight Management	Weight loss and maintenance (without negative impact on lean muscle mass or gastric upset)	Notch inhibitor
Not Assigned (in negotiation)	Immuno-Therapies (VHH Synthetic Library)	Oncology Atopic Dermatitis Chronic Pain	Anti PD-1/CTLA4 (bispecific) Anti-IL31/Anti-Il13/Anti-K9Alb Anti-NGF/Anti-K9ALB
Not Assigned (option pending)	Urinary	Prevention of Urinary Tract Infections in cats with recurring UTIs	Immuno-modulating bacterial Lysate to support immunity against urinary tract pathogens
Not Assigned (option pending)	Sepsis	Supportive care around gastro-intestinal surgeries	Extracorporeal device for pathogens blood filtration

Details available to interested investors under CDA (separate presentation)

Corporate Goals (Investment)

- Build a **sustainable, efficient, reproducible partnering model** to bring innovation from human healthcare into animal health
- Secure **three assets** for partnered program within first two years of activity
- Ensure corporate valuation generates **healthy returns for investors on a 3 to 5 years horizon**

Financial Plan

- **Break-even within 5 years** assuming no direct sales (non-regulated products) and only one exit from FDA regulated program
- **NPV with 10 year look out $130M** (value incrementally increases with number of programs in development)

Founding Executive Team

Alexis Nahama, DVM — Founder, *CEO*

- 25+ years of experience in the biotechnology, animal health and life sciences industry
- 10 years executive experience in human Lide Sciences/Biotech
- Led global development and commercialization of multiple prescription drugs
- Executive team (head of marketing) for $9B publicly traded company (VCA Antech)
- 30 publications in the field of translational, pain and business development

Silvia Chang, MBA — Co-Founder, Head Operations

- 25+ years of experience in the biotechnology, animal health and life sciences industry
- Led development (including CMC) of many biopharmaceutical, small molecule products
- Built, staffed and started up GMP manufacturing facility
- Successfully established functions and built teams in start up environment

Board of Directors

Alexis Nahama (LinkedIn Profile)

Brian Sun (LinkedIn Profile)

Stephane Richard (LinkedIn Profile)

Gilles Guillemette (LinkedIn Profile)

Brian Cooley (LinkedIn Profile)

SEED
Use of Funds

- **Executive Team** (minimum expense until Series A)
- **Clinical Proof of Concept** (AKT-101)
- **Reformulation and Clinical POC** (AKT-201)
- **Regulatory work** (FDA and USDA core programs)
- **Option to License Exercise** ($100K AKT-100)
- **Expand available asset registry** (list of opportunities) to establish early licensing opportunities with strategic animal health companies (ROFR, funding for development)
- **Support Series A** process (seeking $15M)

Angel/VC investment through standard convertible note (terms available on request)

CONTACT

Alexis Nahama, DVM

Founder, CEO

P&L and financials available for accredited investors upon request (and CDA)

Confidential pipeline information available to relevant parties upon request (and CDA)