

OUR JOURNEY IN DAIRY BIOACTIVES

ROD CLAYCOMB



.... A LONG JOURNEY





Alex Harvey Industries (AHI)

- Plastics Manufacturing
- World's First Herd Recording Milk Meter

Carter Holt Harvey (CHH)

- Plastic Products Division
- Relationship with Ruakura Research Centre
- Growing portfolio of milking machine products

CHH Plastic Products Growth

- Established Waikato Milking Systems Brand
- Developed Eazi-Breed CIDR device for controlling oestrus
- Expansion into US market through Dairy Express

DEC International Incorporated

- Established Waikato Milking Systems Division (milking machines)
- Established InterAg Division (CIDRs)
- Bill Thompson (ex-Shell Oil) – bringing oil separation technologies to milk
- University of Wisconsin – on-farm milk fractionation project leads to 1995 patent
- proof-of-principle separation of lactoferrin from cow's milk using membrane technology





2000

2002

2004

2006

2008

2010

DEC International (NZ) Limited

- Established R&D division in milk technology; hired Dr Rod Claycomb
- Focal points were (1) milk sensing and (2) on-farm fractionation

SensorTec Limited

- World's first company in milk sensing
- Greenfield Project – world's first pastoral robotic milking project (partnership with NZ dairy industry)

Milk Fractionation Project

- World's first on-farm milk fractionation robot (University of Waikato project – Prof Conan Fee and Amita Chand)

Quantec Limited

- Established to commercialise on-farm fractionation technology

Mid-2006

- Discovery of unique properties of milk fraction, called IDP (Immune Defense Proteins)
- Started working on Animal Health pharmaceutical applications; non-antibiotic, nil milk-withhold mastitis treatment

2009

- Drs Bragger and Claycomb bought the business from DEC
- Explored expansion into Human Health

.... AN EXPENSIVE JOURNEY



Funding

- ▶ **Personal capital**
- ▶ **Family support**
- ▶ **Waikato Innovation Park**
- ▶ **Angel Investment (50% of company)**
 - ▶ NZVIF
 - ▶ Central Capital (John Birch, Neil Richardson, Earl Rattray, Mark Hickmott, Perry Investments, Julie Caddigan)
 - ▶ Enterprise Angels (Tauranga)
- ▶ **Government Funding**
 - ▶ Callaghan Innovation
 - ▶ New Zealand Trade & Enterprise
- ▶ **Government Support**
 - ▶ New Zealand Trade & Enterprise
- ▶ **External Capital Raises underway**



.... A REWARDING JOURNEY





Value From Every Drop.

Quantec Limited

Dr Rod Claycomb, Managing Director & Co-Founder

Dr Judy Bragger, Senior Scientist & Co-Founder

Dr Colin Ogle, Registration Manager

Quantec Ingredients

Dr Rod Claycomb, General Manager

-IDP® (oral, skin)

Quantec Animal Health

Dave Malcolm, Mastitis Consultant

Dr David Hawkins, Veterinarian

-NMR®/Prefix® (mastitis)

Epiology

Raulee Marcus, Personal Care Advisor

-Epiology® (skincare)

CORE TECHNOLOGY PLATFORM

Quantec Ingredients

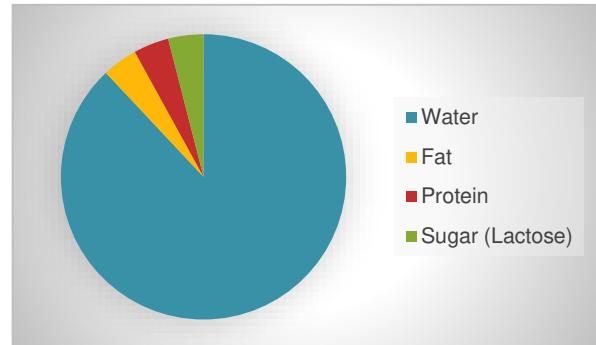
&

epiologyTM

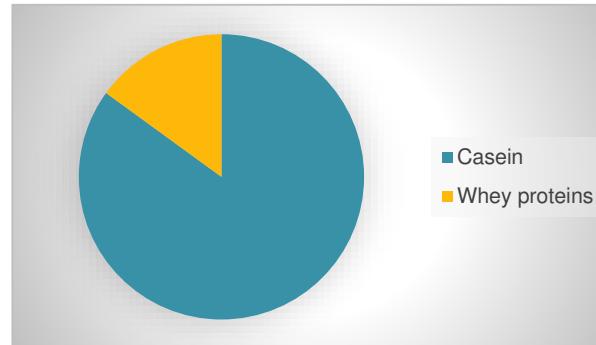
ANTIMICROBIAL MILK PROTEINS

Milk Composition

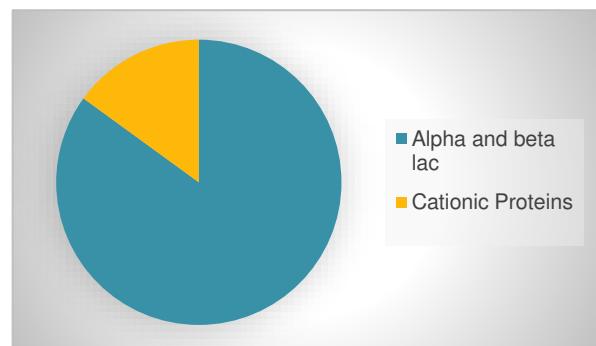
Milk (10L)



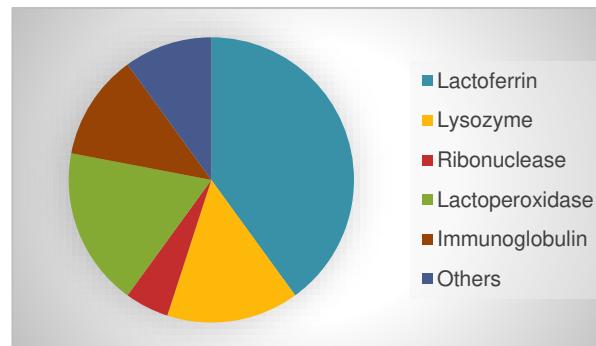
Proteins



Whey Proteins



Cationic Proteins (1g)



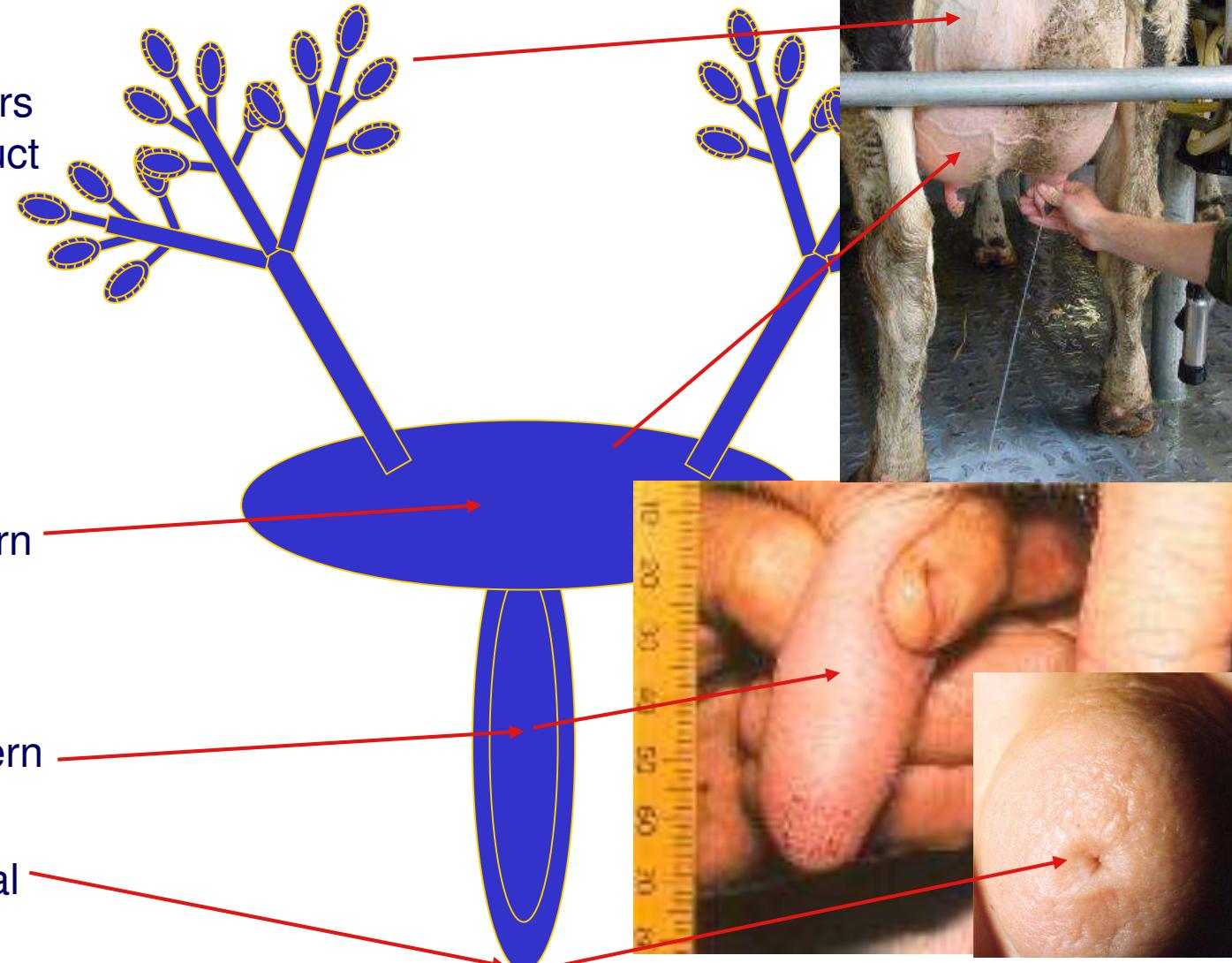


IDP®
Immune Defense Proteins

Defense 'Engine' of the Udder

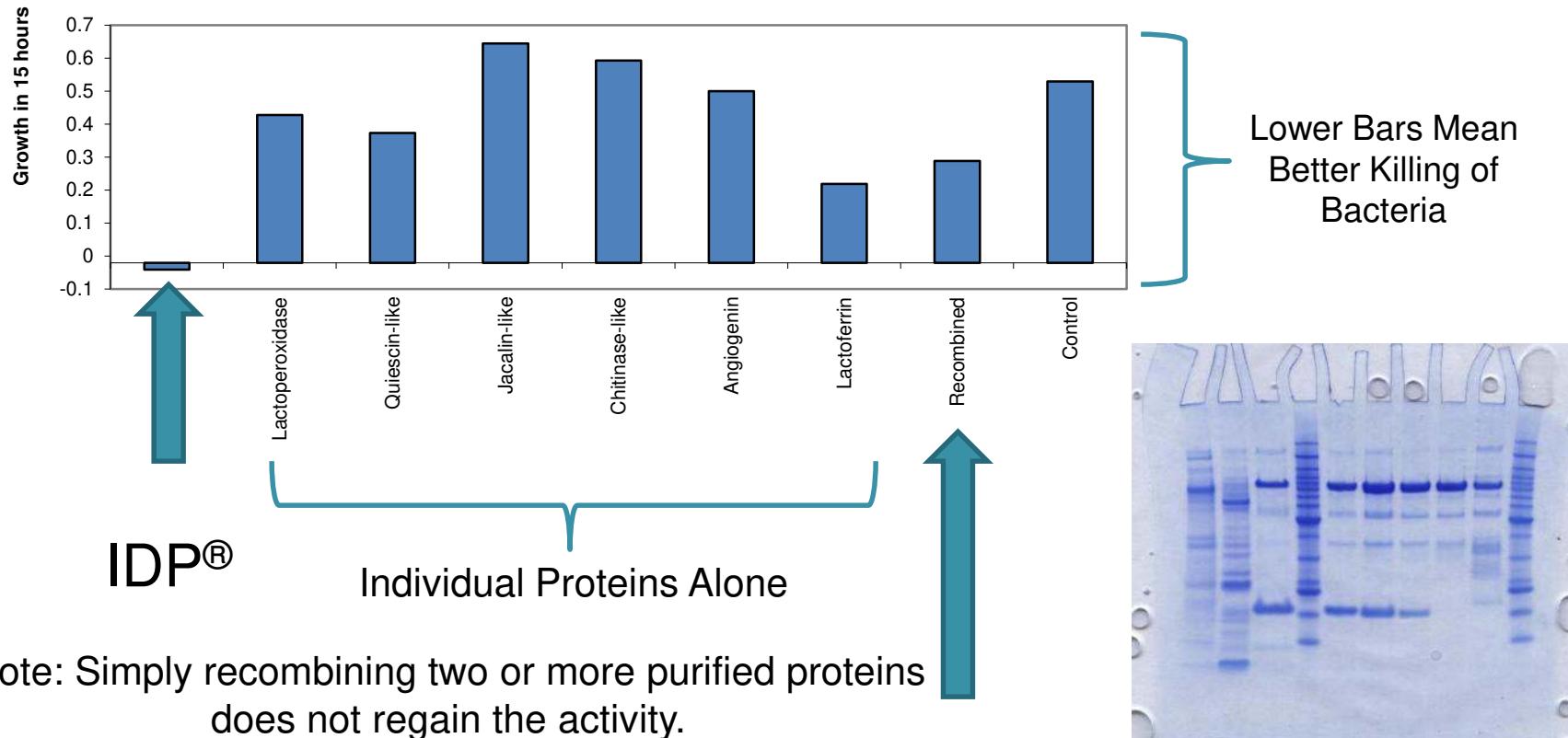
All internal surfaces lined with 'skin'

Alveolar Clusters
Feeding into Duct
System

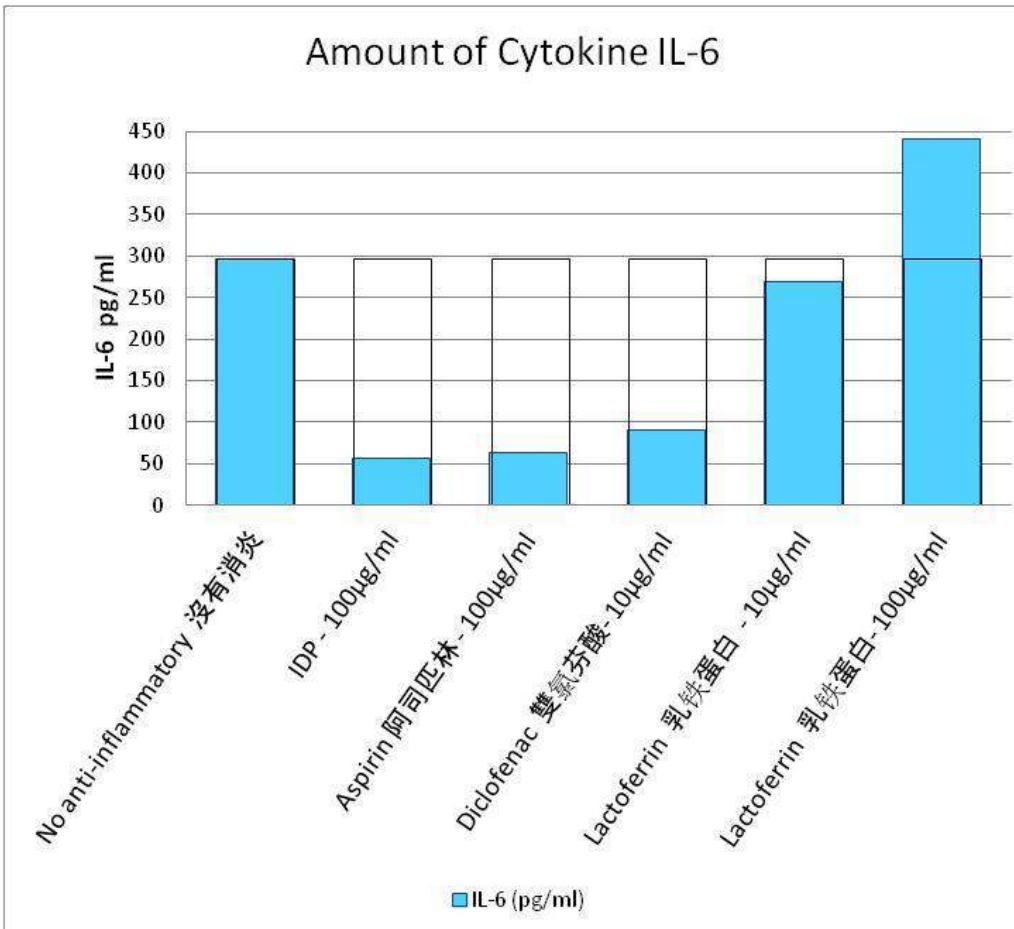


IDP Antimicrobial

S aureus Inhibition



IDP Anti-inflammatory



- ▶ Lower bars mean better anti-inflammatory action.
- ▶ The IDP[®] is a potent inhibitor of IL-6.
- ▶ Again, IDP[®] is more effective than lactoferrin alone.
- ▶ At the same concentration (100 µg/ml), IDP[®] was as effective as aspirin.

(Independent testing conducted by Trinity Bioactives, Wellington, New Zealand)

IDP® Technology



IDP
Immune Defense Proteins



epiology
oraburst



milkamune



Anzipro
Immune Defense Proteins

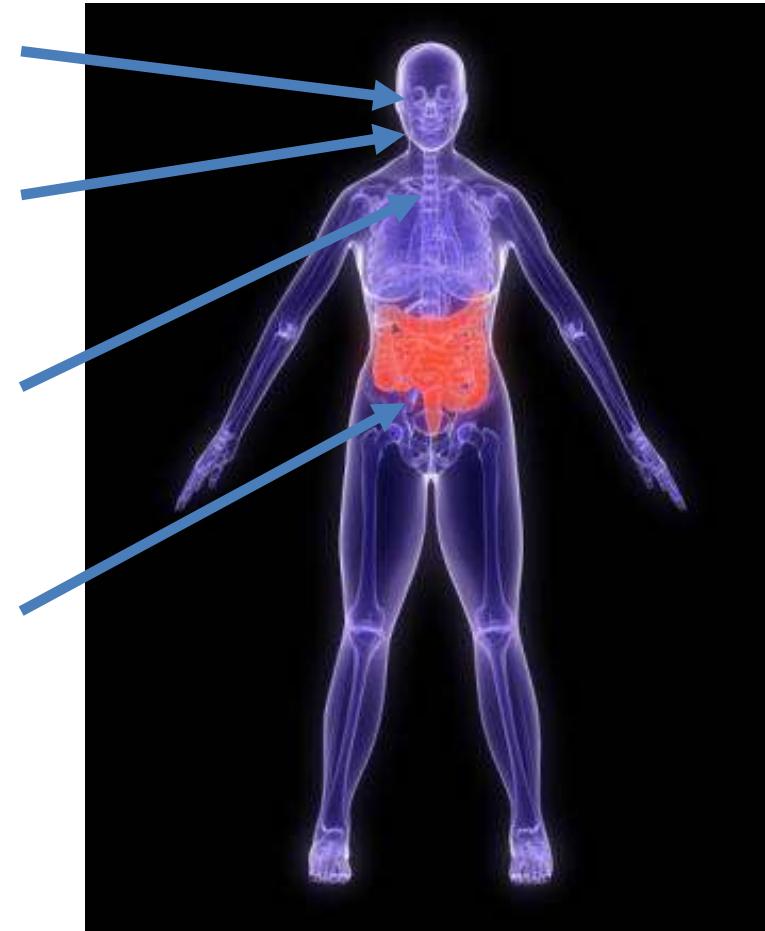
Skin

Mouth

Throat

Gut

Companion Animal

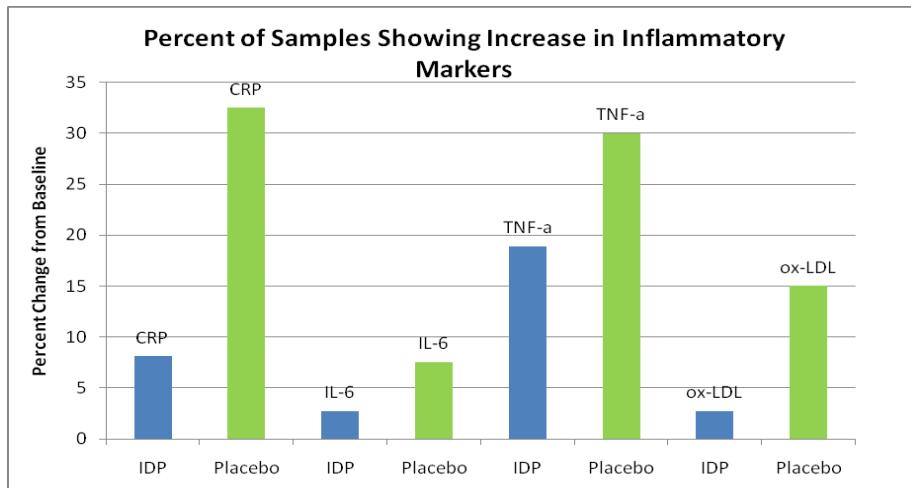
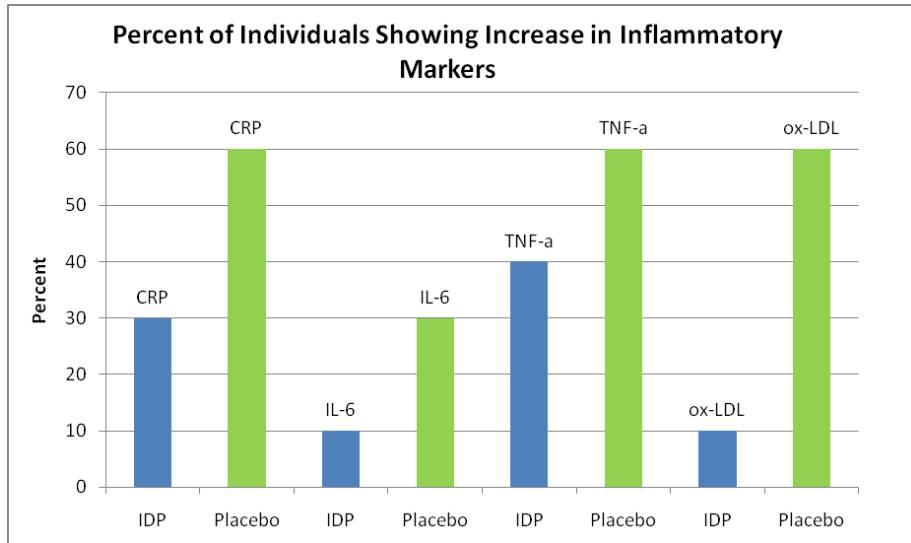


Quantec Ingredients

epiology™

Quantec Animal Health

IDP Systemic Immunity



- ▶ **IDP[®] reduced the number of subjects showing an increase in key inflammatory markers**
- ▶ **IDP[®] reduced the percentage increase in key inflammatory markers over the placebo effect**



Number of improvers in redness and inflammation



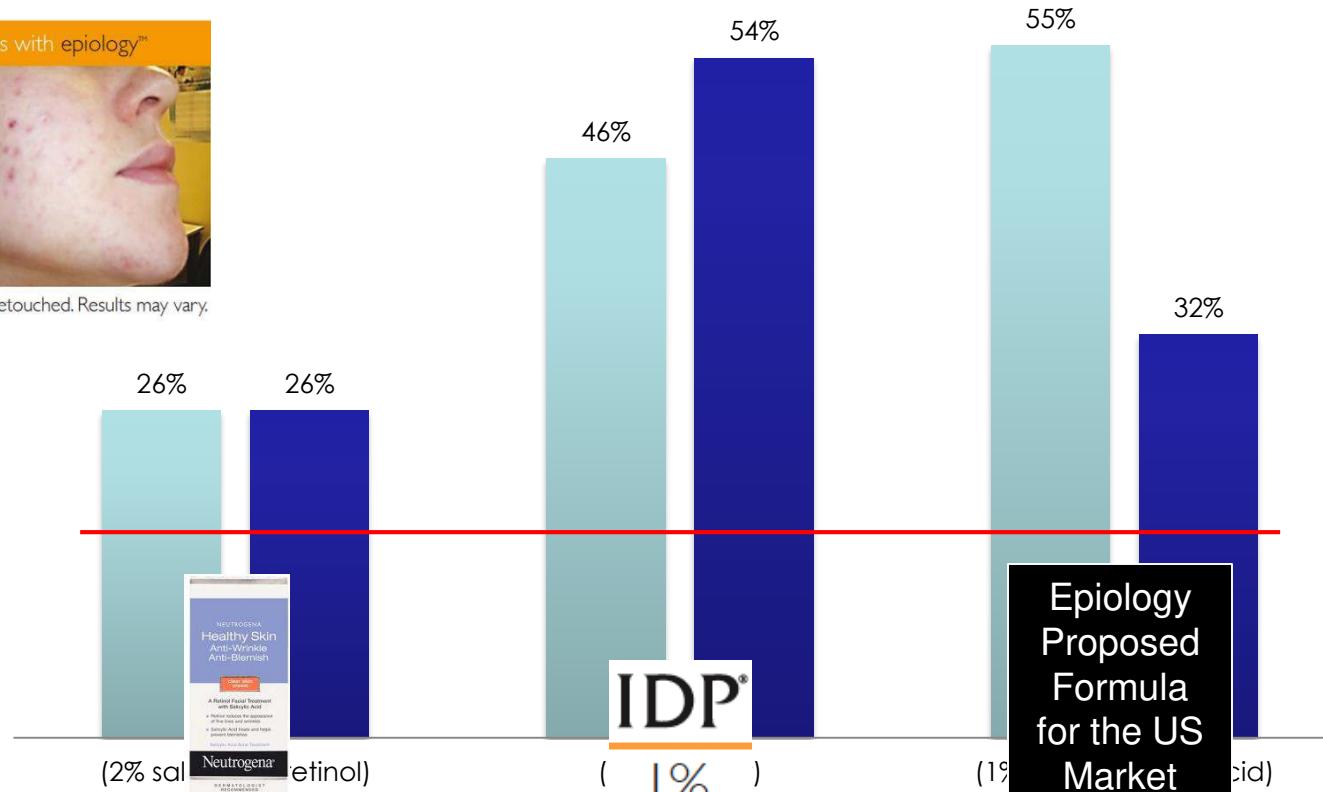
Before use with epiology™



After 3 weeks with epiology™

Photographs were provided by the subject and have not been retouched. Results may vary.

■ Week 2 ■ Week 6



Proven Global Platform
For Natural Skincare

epiology™

epilogyskincare.com



Quantec Ingredients

epiology™

Quantec Animal Health

My name is Kaitlyn, Im 15 and had bad acne on my forehead, around my nose and my chin. I tried Epiology and the redness had gone and my skin was looking better. After 2 weeks most of my pimples had vanished, and a month later, my skin looks great, and clear of all signs of acne. I used both the wash and the cream together and would recommend Epiology for anyone who has an acne problem. It is gentle on the skin but really works.

epiology™

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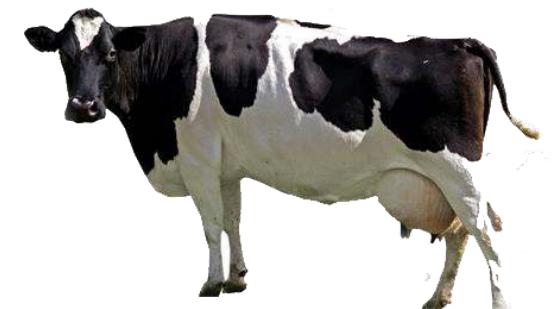


Value From Every Drop.

CORE TECHNOLOGY PLATFORM

Quantec Animal Health

NON-ANTIBIOTIC MASTITIS TREATMENT



Quantec Ingredients

epiology™

Quantec Animal Health

Milestones and Remaining Objectives

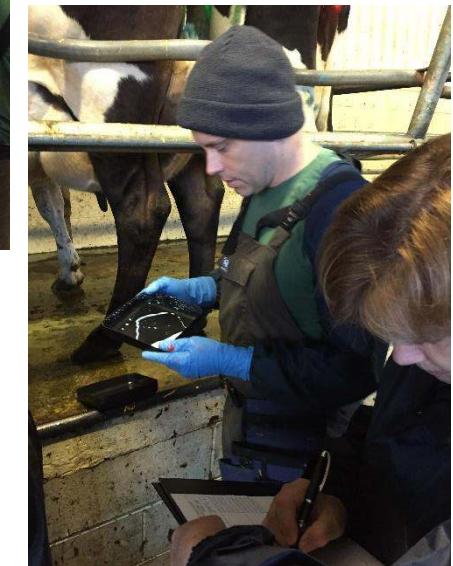


Key milestones achieved

- Efficacy on par with antibiotics (continually affirmed)
- GMP manufacturing proven (3 commercial batches – passed 18 months actives stability)
- Nil milk WHP granted by ACVM (NZ)
- Global patents granted, with more to come

Two remaining key objectives

1. Finalisation of formulation
 - Completion of pilot formulation studies to confirm carrier, active levels and dosage regime
 - Final scale-up of GMP manufacturing for registration studies
 - Finalisation of syringe delivery mechanism
2. ACVM Registration
 - Formal safety study
 - Formal efficacy study
 - Registration filing





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The Bioactive Journey...

.... A LONG JOURNEY

.... AN EXPENSIVE JOURNEY

.... A REWARDING JOURNEY



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THANK YOU!