

Cosabody-10

Nature's Pathway to Antibiotic Free

Jordan Sand, Mark Cook, Chris Salm

Ab E Discovery

December 2, 2015

The Marketplace puts a premium on antibiotic free



Conventional
w/Antibiotics

90.8%* of market



Antibiotic-free
w/Chemical

Wholesale
Premium 35%

9%* of market

* From USDA as of 2014

Antibiotic Free is About Human Health

Multi-drug Resistant Pathogens

	Conventional chicken and pig workers %	Antibiotic free chicken and pig workers %
Worker	38	23
Household	29	0

Consumer Fear is Driving Antibiotic Free



“McDonald’s U.S. division said on Wednesday it would stop sourcing chickens raised with antibiotics within two years...” Fortune Mag

“Our commitment is to serve chicken raised without antibiotics in all Chick-fil-A® restaurants, nationwide, within five years.”
Chick-fil-A website



“But we’re taking that a step further by sourcing 100% of our chicken from farms that raise them without antibiotics either. We also want to avoid any supplier that uses additional additives in their feed, like arsenic.”
Chipotle website



All of the chicken, roasted turkey, sausage and ham used in Panera Bread's salads and sandwiches are raised without the use of antibiotics.

Current Solutions Are Not Viable

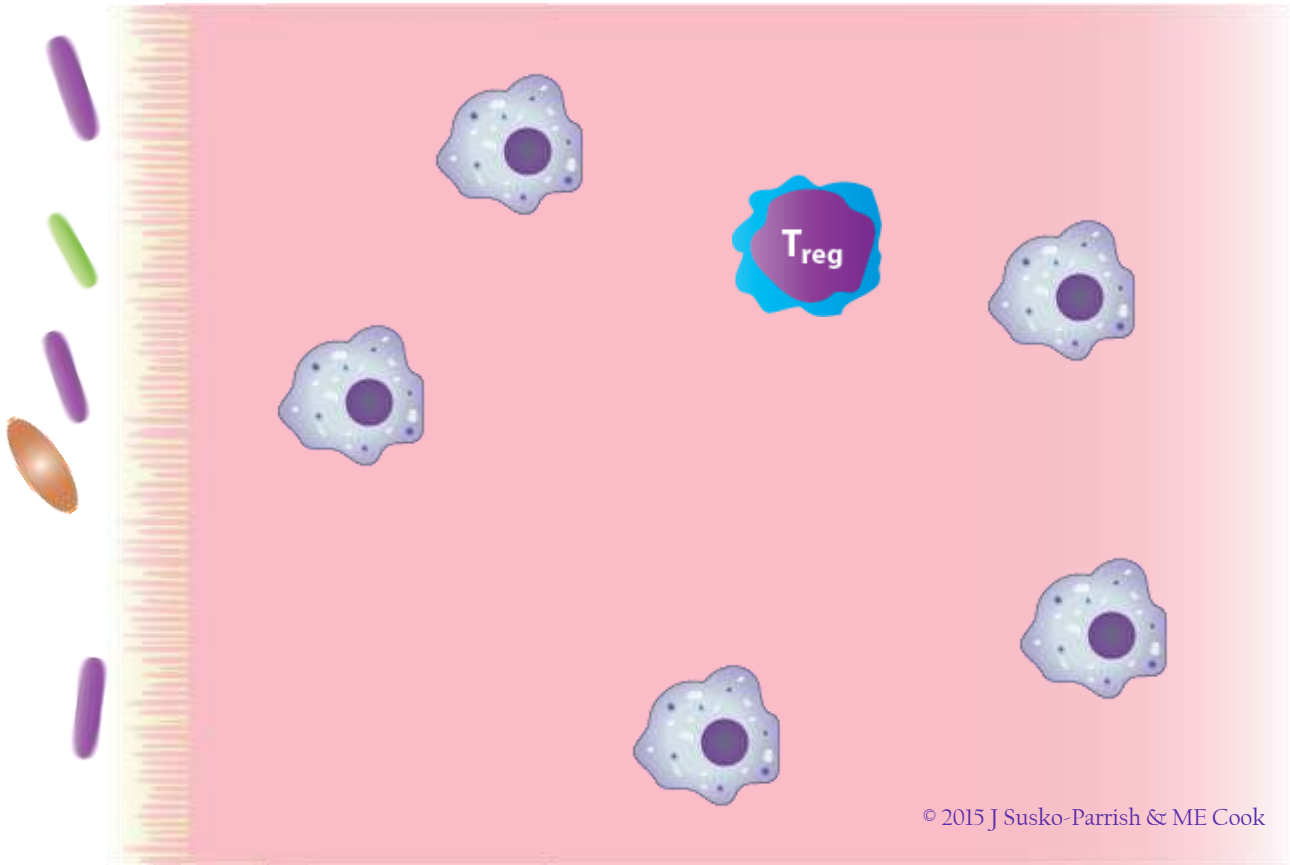
- ▶ Antibiotic free is not drug free
- ▶ Drug free is an ecological and humane problem
 - ▶ More pollution
 - ▶ Low survival of chickens
- ▶ Cost more to produce

Cosabody-10 Chickens

- ▶ Drug free
- ▶ Demanded by the marketplace
- ▶ Reduce antibiotic resistant microbes in humans
- ▶ Ecological and humane
- ▶ Cost near to or the same as conventionally raised poultry

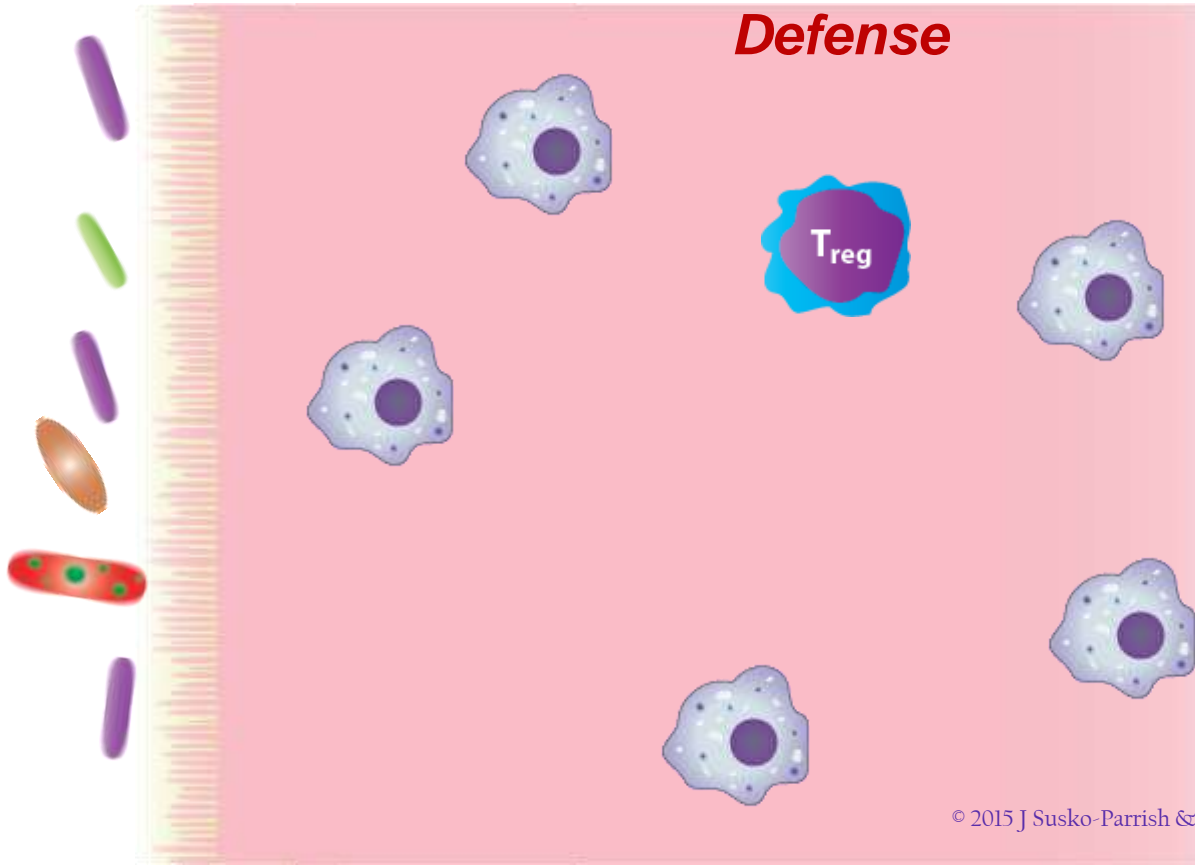
Cosabody-10 in action

Mucosal Microenvironment



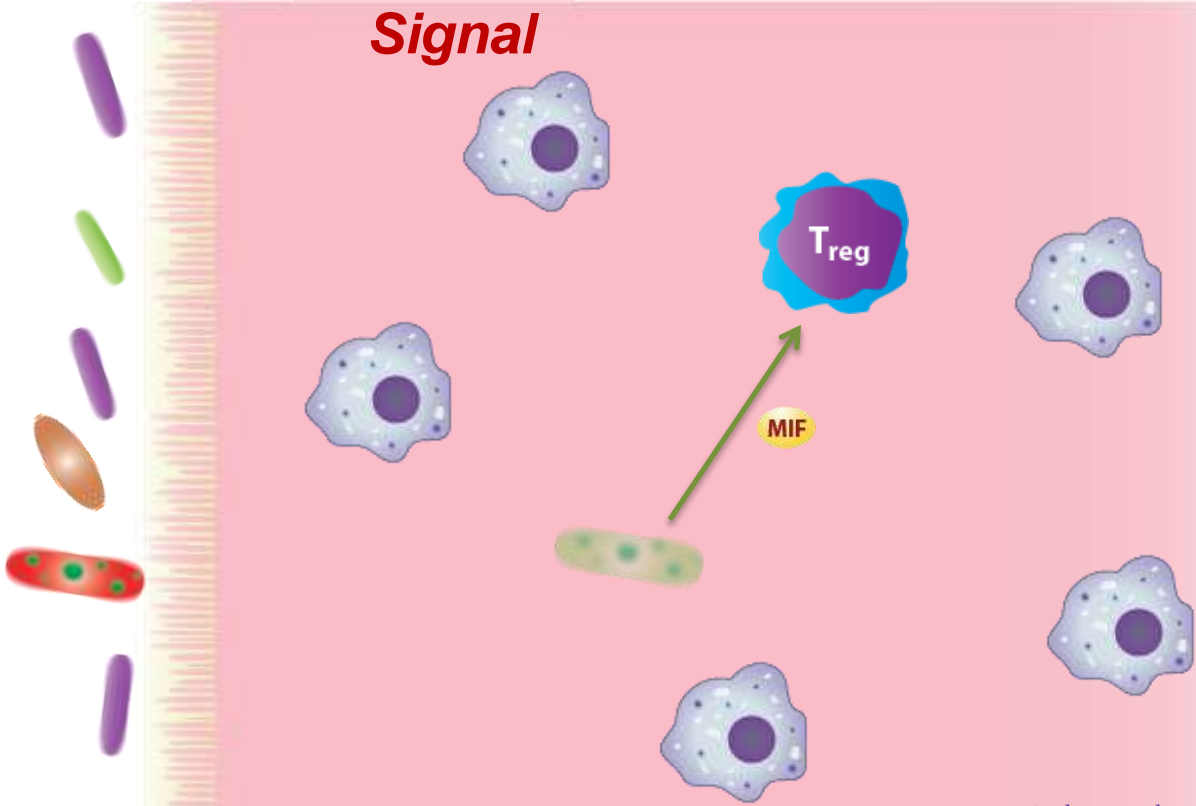
Conventional

Pathogen Invasion - Conventional Defense



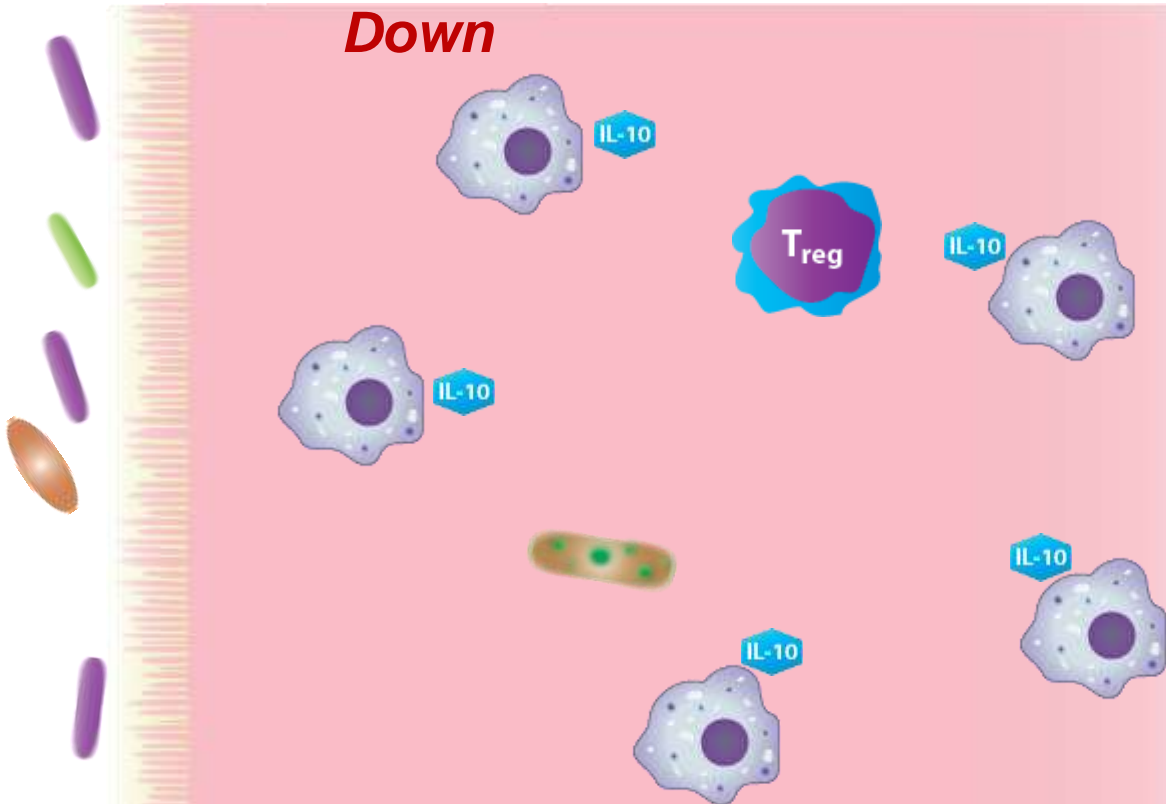
Deception

Pathogen Strain ID & Deception Signal



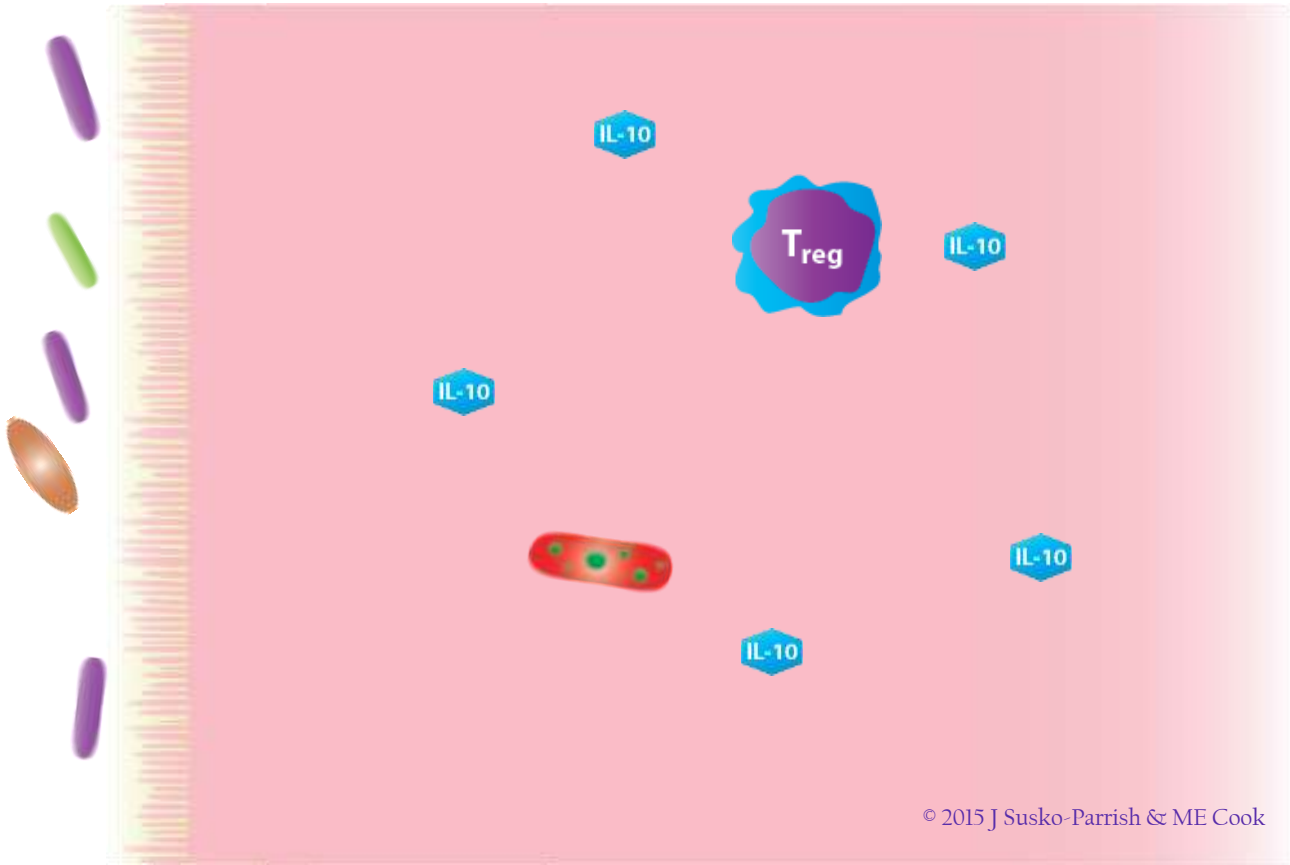
Deception

Immune Cell Stand Down



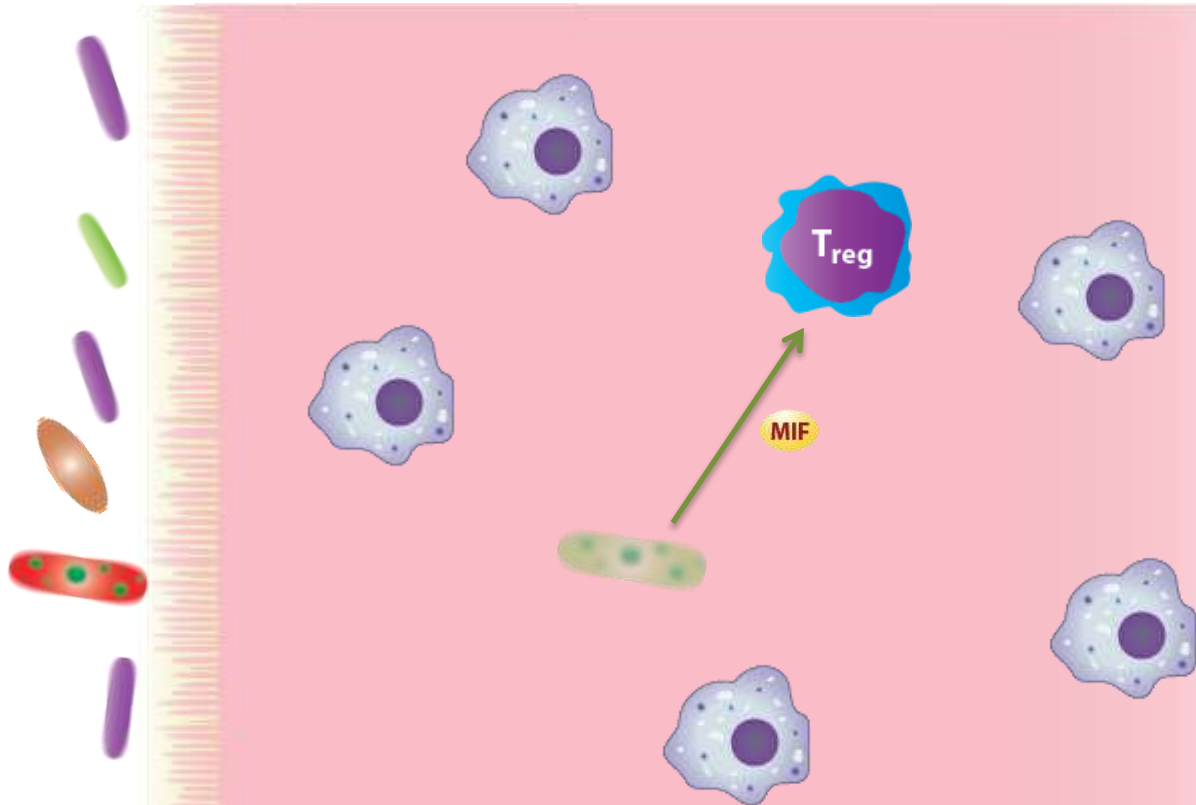
Deception

Infection



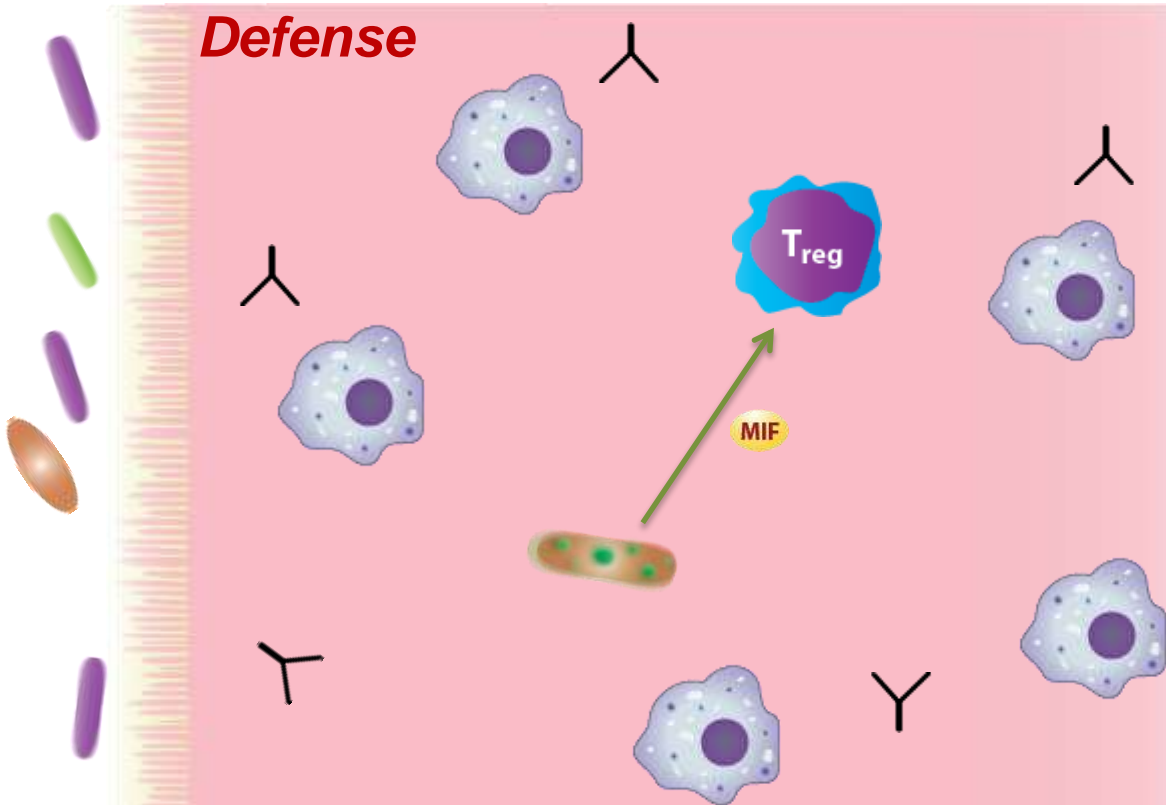
Thwarting Deception

Oral anti-IL-10



Thwarting Deception

Stand Down on Blood H-0 Conventional Defense



Cosabody-10 Manufacture and Use



our journey: ANTIBIOTIC-FREE CHICKEN



Cosabody-10 Competitive Advantage

- ▶ Antibiotic and drug free
- ▶ No drug resistance
- ▶ Similar or improved performance
- ▶ Humane
- ▶ Ecologically sound

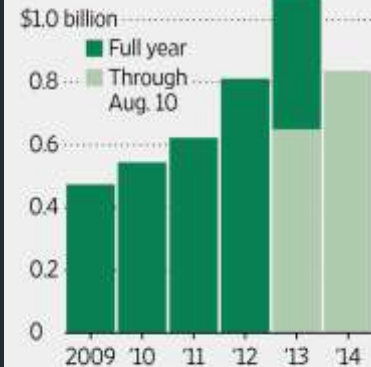
	Best Practices	Cosabody-10
Body Weight	10.79	10.58
Mortality	4.76%	3.57%
Feed Conversion	1.94	1.93
Cosabody-10 value		\$0.0288/ Started Chicken

“Antibiotic Free” is the Fastest Growing Segment of the Chicken Market

- ▶ Stable available market at 8 billion chickens grown/year
- ▶ Antibiotic free @9% with growth of 34%/yr
- ▶ Cost effective alternative will yield “all in” adoption

Taking Flight

Consumer spending on chicken raised without antibiotics



Notes: Sales of fresh chicken; doesn't include restaurant and other commercial purchasing

Source: IRI

The Wall Street Journal

Cosabody-10 Revenue Model

- ▶ Revenue= \$0.05/bird
- ▶ Cost of goods sold=\$0.02/bird
- ▶ Gross margin=60%
- ▶ Current antibiotic-free market size=\$45M/yr
- ▶ Total chicken market opportunity=\$460M/yr
 - ▶ Market shift from conventional to drug/antibiotic free

Product Development at the University

▶ Milestones

- ▶ Four filed patents via WARF, 3 PCT
- ▶ Bench assay for active ingredient and testing feed established
- ▶ University trials completed
- ▶ Uses in dairy calves, beef cattle and lambs demonstrated and patents applied for

Field Trials Completed

▶ Milestones

- ▶ Integrator trials (500K birds). Effective dose determined
- ▶ Three trials 150K birds to confirm dose.
- ▶ First revenue generating (250K birds/month) planned
- ▶ Second revenue trial site started (80K birds)

Commercialization Milestones

- ▶ Egg production site for phase 1 (175K broilers), 2 (30M broilers) and 3 (90M broilers) production identified
- ▶ Company start, April 2015
- ▶ Founders: Salm, Sand, Cook
- ▶ Accounts and financial structure in place (Salm Partners)
- ▶ Attorney retained: Hyman, Phelps, McNamara LLP
- ▶ IP Licensed through WARF.

Regulatory/Safety

- ▶ Sold as spray dried whole egg following AAFCO definition
- ▶ Production in feed grade plant
Not edible for humans
- ▶ Sold without claims
- ▶ Pasteurized and Salmonella free

Cosabody-10 Team

▶ Chris Salm, PhD, CEO

- ▶ Co-founder
- ▶ 15 years at Conagra
- ▶ Started Salm Partners in 2004. 10% of US sausage production

▶ Mark E Cook, PhD, CSO

- ▶ Co-inventor, Co-founder
- ▶ Four Start ups, over 190 patents world-wide
- ▶ Professor Animal Sciences

▶ Jordan Sand, PhD, CTO

- ▶ Co-inventor, Co-founder
- ▶ 11 patent applications, WARF Innovation Award 2012
- ▶ Scientist Animal Sciences

Risks and Solutions

- ▶ **Regional disease outbreak (AI)**

- ▶ Disruption of egg movement

- ▶ **Egg price inflation**

- ▶ COGS increase

- ▶ **Solved through production at multiple sites in US**

- ▶ **Solved by integrating production using spent hens**

Business Status and Outlook

▶ Current Customers

- ▶ Midwest largest chicken company
- ▶ 6th largest US chicken company
- ▶ Conversations with the largest turkey and chicken company in the world

▶ International Customers

- ▶ Interest in EU, China and SA

Company Launch Base

- ▶ **Cosabody-10 is a revolutionary solution to a massive market need**
- ▶ **Cosabody-10 is technically and market de-risked**
- ▶ **Ab E start and launch is to meet customer orders**
- ▶ **Ab E's team are leading scientists and respected businessmen**

Nature's pathway to antibiotic free