PROGLUCAN™

Immune Support for Animal and Human Health

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@ALGALSCIENTIFIC @GEOFFHORST
Trend: Overuse of antibiotics and increasing levels of antibiotic resistance

In the US alone each year:
> 2,000,000 antibiotic resistant illnesses (e.g. MRSA)
> 23,000 deaths
$20-30B in health care costs and lost productivity
Solution: A natural compound that can support the animal’s own immune system

**beta-1,3-glucan**

- Activates the “innate” immune system
- Decades of research (200+ publications)
- Typically extracted from yeast cell walls
- Found in 100’s of functional foods & supplements but historically very $$$$

![Diagram of yeast cell wall components]

- Glycoprotein
- Mannoprotein
- β-Glucan
- Chitin
- Mannoprotein
- Plasma membrane
- Yeast cell wall
Algal Scientific: Commercial scale production of beta-1,3-glucan with sterile algal fermentation
Our path to commercialization

1) Demonstrate safety
   • $400K in toxicology and safety trials (rodents, swine, poultry)
   • Acute and chronic tests up to 200X normal dose levels
   • Obtained self-affirmed GRAS status for humans
   • Fed to 120M chickens and 10M fish, ???M shrimp so far

2) Demonstrate efficacy
   • Over 37 efficacy trials (poultry, swine, fish, shrimp) at Universities and CRO’s
   • $2.5M+ between Algal Scientific and partners

3) Early adopter customer trials
   • Most customers want to try on their own animals/farms
   • Pen trials (high replication) to large scale swap-in of product

4) Manufacturing
   • Scaled up fermentation from flask to 20,000 liter fermenters in-house
   • Brought drying in-house to further decrease COGS and maximize margin
Piglet efficacy trial example:

- Pen study with weaned piglets at North Carolina State, 35 day trial
- 10 replicates per treatment, 4 pigs per replicate
- 34% improvement in weight gain (ADG) vs. control ($p < 0.05$)
- 6% improvement in gain to feed ratio (G:F) vs control ($p < 0.05$)
- ProGlucan effect similar to effect of antibiotic
Suggestions based on our experience…

1) **Good data is critical:**
   - Raise enough $ to fund at least 5-10 trials to start showing safety & efficacy

2) **Partnerships:**
   - Tap in to their technical expertise
   - Co-fund efficacy trials
   - Credibility with customers
   - Potential distribution/marketing partner

3) **Patience:**
   - Small, early adopters may start using with “your” data (0-12 months)
   - Larger, established customers will want to try on their farms 1, 2, ..n times (6-24 months)
JOIN US!!

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