

# ImmunoWall



## Single Source of Quality Controlled Glucomannans

*ImmunoWall* is a prebiotic derived from the cell wall of a single source of *Saccharomyces cerevisiae*. The polysaccharides obtained from the yeast cell wall consist of glucans, mannans, quitines and galactans. The glucans are a group of d-glucose polymers with glycosidic linkages and 1, 3 and 1, 6 bonds. In *ImmunoWall* the glucans make up about 50% of the yeast cell wall, while the mannanoligoscharides (MOS) constitute about 40%.

### Quality Control.

A key differentiating factor for *ImmunoWall* from many similar products in the market place is the quality control and quality assurance program and procedures. The Old Mill Troy recognizes that product quality is critical to ensuring consistent and repeatable animal performance results.

*ImmunoWall* comes from a single fermentation site, using a single strain of *Saccharomyces cerevisiae*, thereby providing a stable and consistent source of the yeast cell wall material. Analyses are routinely undertaken to minimize any variation in glucan and mannan contents.

***Consistency equals Repeatability.***

### Benefits of *ImmunoWall*.

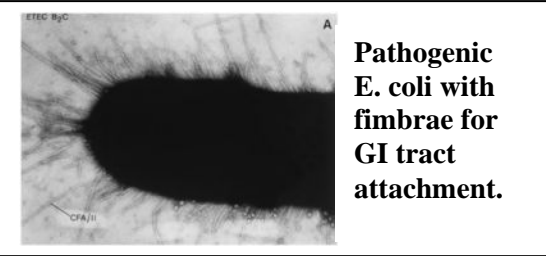
- 1) Demonstrated to have greater pathogen binding capacity than leading competitor MOS products. The result is fewer pathogens colonize the gastro-intestinal tract, thereby maintaining a healthier gut ecosystem.
- 2) Beneficial modulation of the immune system, resulting in increased Immunoglobulin synthesis, improved and more persistent titer levels post vaccination.
- 3) Improved animal performance. Less energy spent repairing the gastro-intestinal tract and dealing with the stress induced by pathogen proliferation.
- 4) Improved gut health results in longer villi and thinner gastro-intestinal membranes. This provides a greater surface area for nutrient absorption and less of a barrier to nutrients entering the blood flow from the gut.

## *Animal Health equals Profitable Production*

### Binding of Pathogenic Bacteria by Different Sources of MOS (J. Maurer, 2005)

Patogen Strain	Sample 1	Sample 2	ImmunoWall
APEC1 2716	-	-	-
APEC1 2964	-	+/-	+
APEC1 3687	+/-	+/-	-
APEC1 AOS1	-	-	-
APEC1 AOS6	+	+	+
APEC1 AOS9	+	+	+
APEC1 AOS13	-	-	+
APEC1 AOS15	-	-	-
<i>S. enteritidis</i> phage type 8	-	-	-
<i>S. enteritidis</i> phage type 13	-	-	+
<i>S. enteritidis</i> phage type 4	-	-	+/-
<i>S. typhimurium</i> 2 SR11	-	-	+
<b>All Strains</b>	<b>3/12</b>	<b>4/12</b>	<b>7/12</b>

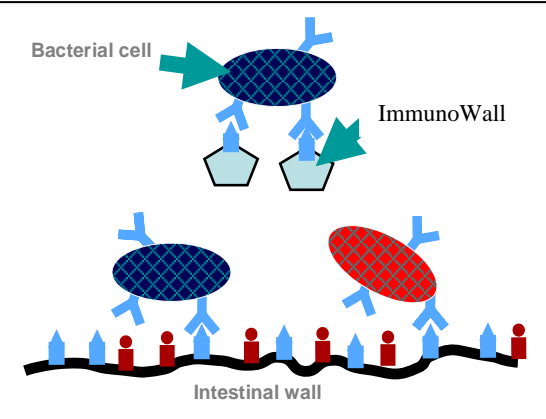
A number of enteric pathogens have mannose binding fimbrae which is used to attach to the gut villi. **ImmunoWall** acts as a decoy upon which these pathogens attach and are flushed from the GI tract.



Avian pathogenic *Escherichia coli* = APEC.

### Features of *ImmunoWall*.

1. An all natural product that is GMO free.
2. Used in multiple species (shrimp, fish, poultry, swine, dairy beef, equine, zoo and pet diets).
3. No withdrawal period required.
4. Flexible manufacturing: Pellet and extrusion stable.



### Use Rate.

Animal Category	Production Phase	Inclusion Rate (kg per ton)
Swine:	Starter	2
	Grower	1
	Finishing	0.5
	Gestation	1
	Lactation	0.5
Poultry:	Starter	2
	Grower	1
	Finishing	0.5
	Layer/Breeder	1

<b>Dairy:</b>	<b>Milk or Milk Replacer</b>	<b>4</b>
	<b>Growing Stock</b>	<b>10</b>
	<b>Mature Animals</b>	<b>15 to 20</b>
<b>Horses:</b>	<b>Gestation/Lactation</b>	<b>20</b>
	<b>Young Stock</b>	<b>10</b>

### Inclusion Rate (grams/head/day)

**4**  
**10**  
**15 to 20**  
**20**  
**10**