

Yeast Cell Wall

Natural Immune Enhancer and Efficient
Mycotoxin Binder

- From primary fermentation of *Saccharomyces cerevisiae*
- Enriched in MOS and $\beta(1,3-1,6)$ -glucan

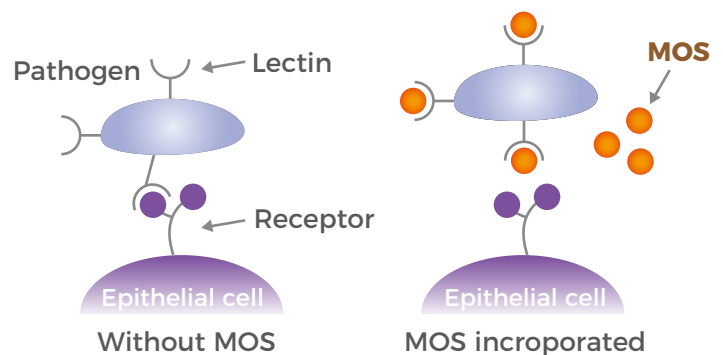
Description

Fubon Yeast Cell Wall is a natural component derived from yeast *Saccharomyces cerevisiae*. It's obtained by the autolysis of yeast cells. After yeast autolysis is completed, cell wall and yeast extracts are separated, and spray dried. The main efficient ingredients are β -glucan and mannan oligosaccharides, and can increase immunity, block pathogens and bind mycotoxins (especially Zearalenone).

Efficacy

- Reduce mortality
- Bind mycotoxins
- Improve animal performance

Mode of action

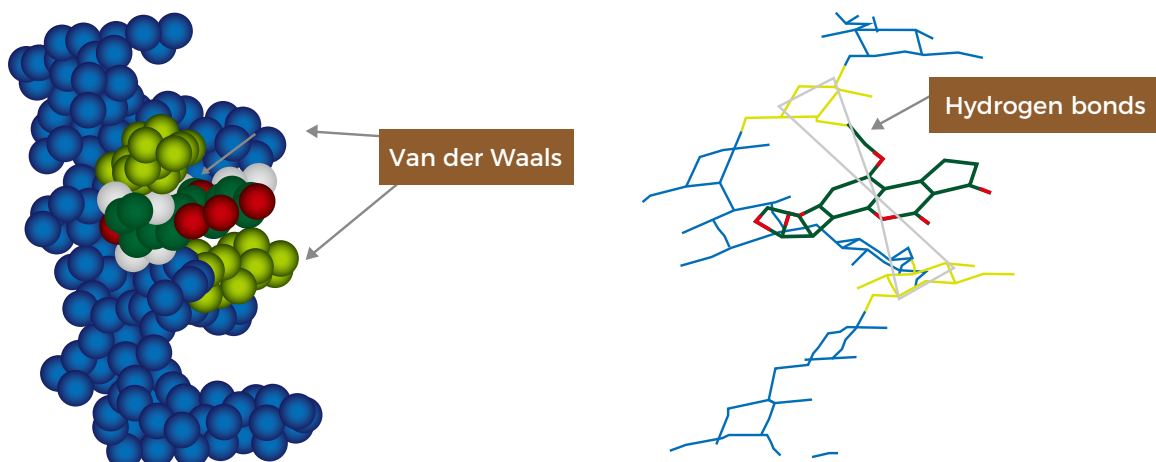


A. Block and excrete pathogens

The mannan oligosaccharides of yeast cell wall has similar structure with binding site of pathogens on the intestinal wall. Thus it competitively bind the pathogens and interfere with the binding between pathogens and intestinal wall. Furthermore, as the mannan cannot be digested by pathogens and intestinal enzymes, the tightly bound pathogen-mannan complex can be discharged from the body.

B. Bind mycotoxins

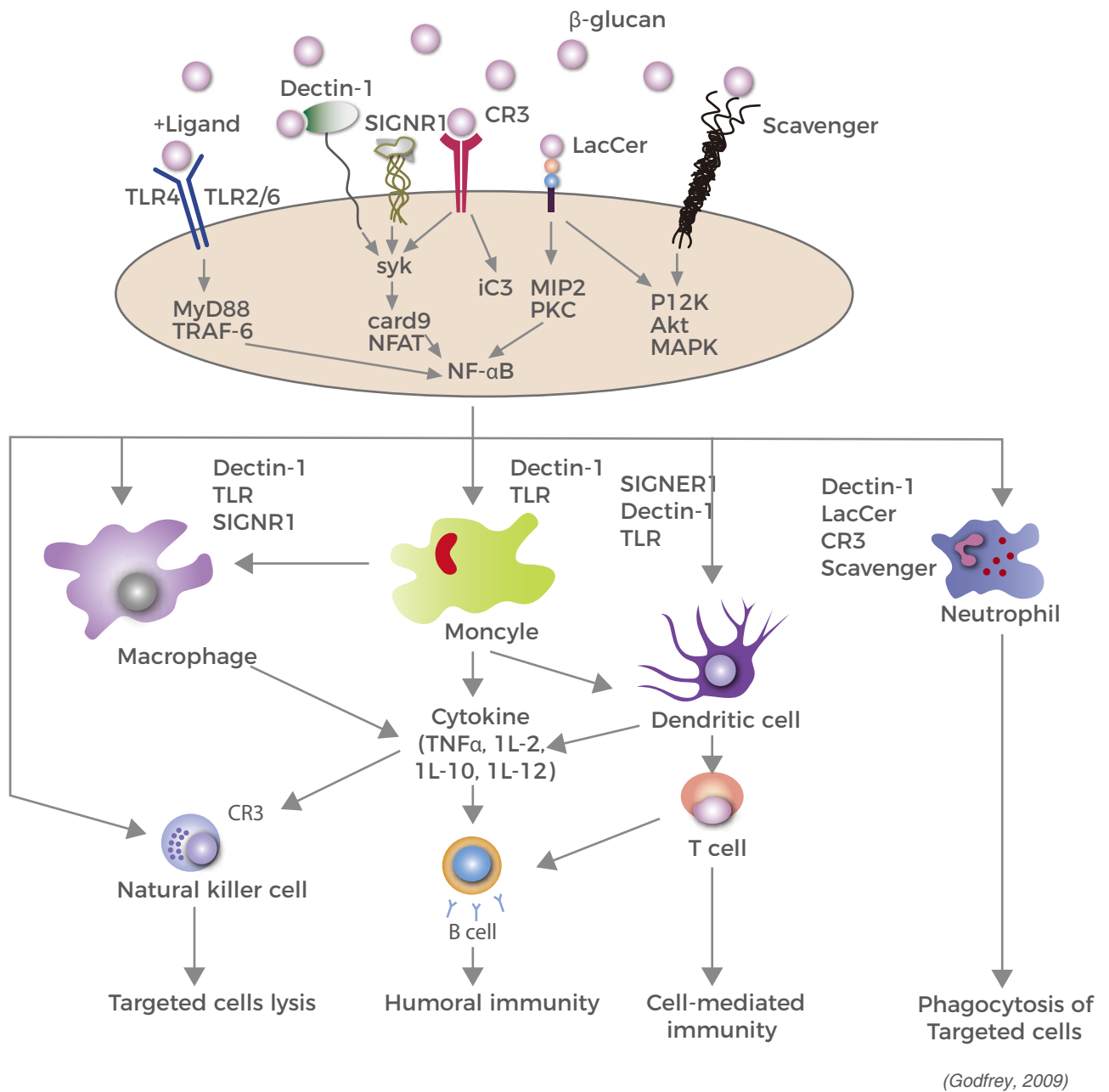
The special space structure of yeast cell wall provides lots of binding sites for different toxins, the intermolecular forces like hydrogen bonds and Van der Waals forces can help to reinforce the binding and form polysaccharides-toxin complex, which prevents the mycotoxin being absorbed.



(A. Yiannikouris, 2006)

C. Stimulate immune system

β -glucan can bind to the surface receptor of immune cells, exciting the immune relate signal transmission channel, stimulate immune cells to release downstream signal molecule, and induce the specific and non-specific immune response.



Application

A. Fubon Yeast Cell Wall can agglutinate pathogens

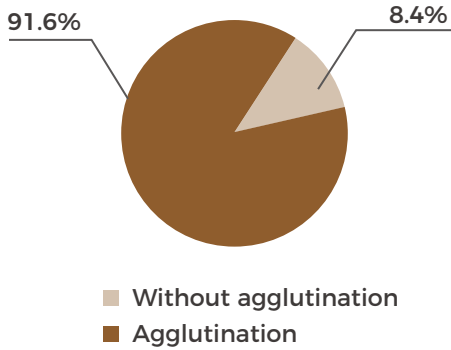


Figure 1 *in vitro* absorbability of *Salmonella* spp.

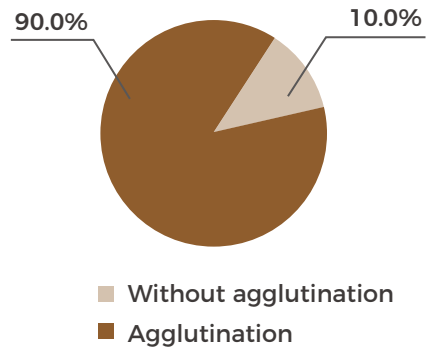


Figure 2. *in vitro* absorbability of *E. coli*

(Sydney Hertz Alves et al., 2009)

B. Bind several kinds of mycotoxins, especially zearalenone

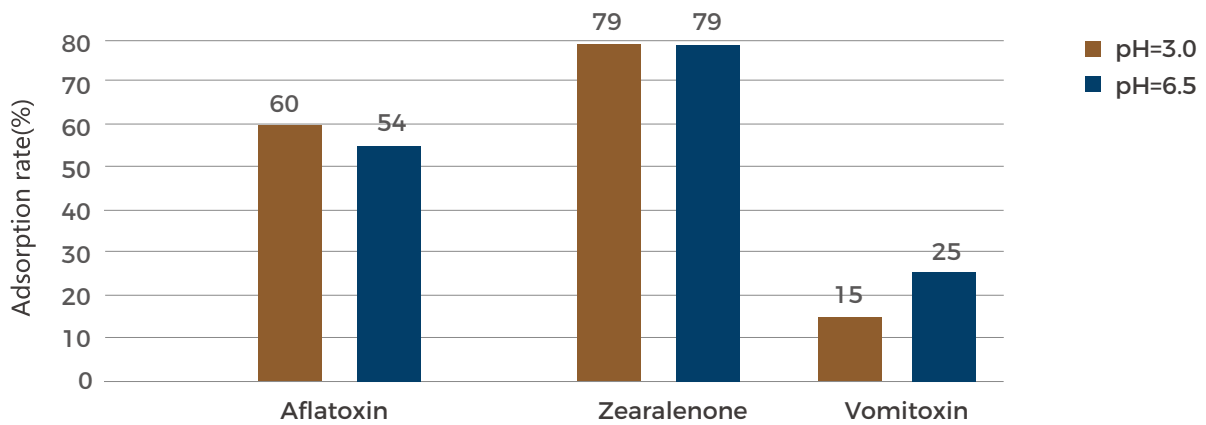


Figure 3. The mycotoxin adsorption rate of Fubon Yeast Cell Wall under different pH

(George Rottinghaus, 2009)

C. Stimulate immune system, improve both specific and non-specific immune response

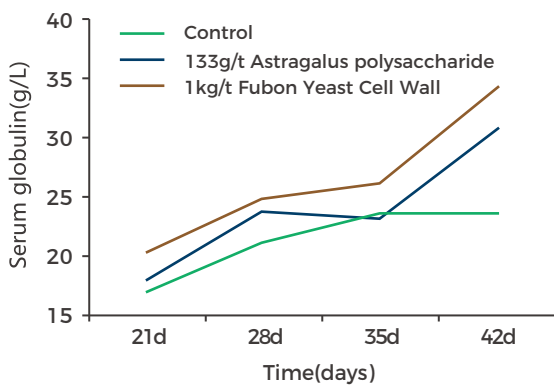


Figure 4. Influence on the globulin content in broiler serum

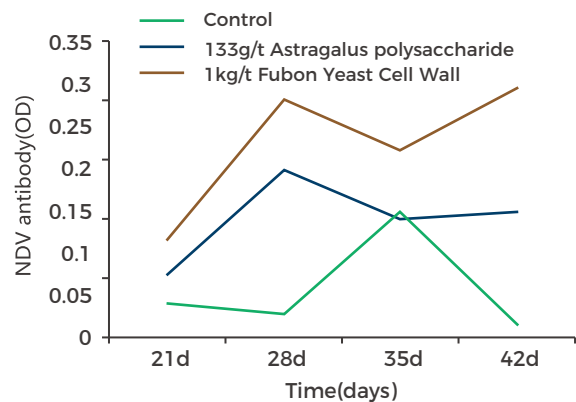


Figure 5. Influence on the NDV antibody levels of broiler serum

Note: Two hundred 21 days-old broilers, trials were performed 21ds.

(Li chunsong, 2012)

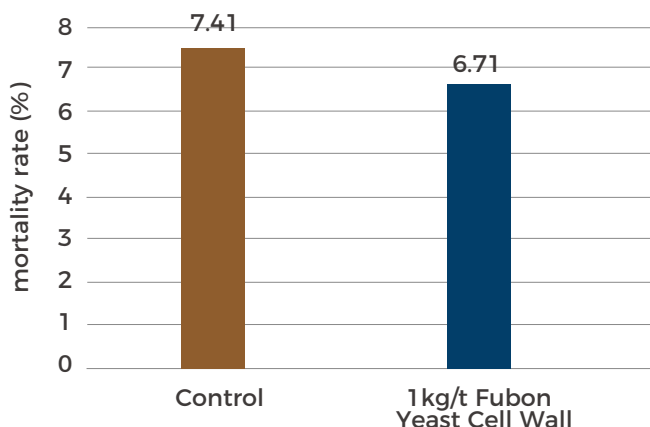


Figure 6. Influence of Fubon Yeast Cell Wall on the broiler mortality

Note: 600 day-old broilers, trials were performed 42ds.

(Huang Xin, 2013)

D. Relieve stress, improve the survival rate

Table 1. Effects of Fubon Yeast Cell Wall on the mortality after challenged with pathogenic bacteria for different aquatic species

Species	Challenge test for 14d	Doasge of Fubon Yeast Cell Wall	Average mortality, %	
Penaeus vannamei	Vibrio harveyi	0	93.33a	(Chen CF, 2004)
		0.67%	30.0b	
Koi	Aeromonas veronii	0	68.6±1.8a	(Lin, 2011)
		0.2%	36.9±0.9b	
Grass carp	Flavobacterium columnare	0	93.3a	(Chen CF, 2008)
		0.2%	36.7b	

Note: After 55ds, 100 grass carp were randomly selected and marked. All fishes were put in the same tank without aerator. After long distance transportation till more than half fish are dead. Count the number of dead fish in different groups.

E. Improve production performance

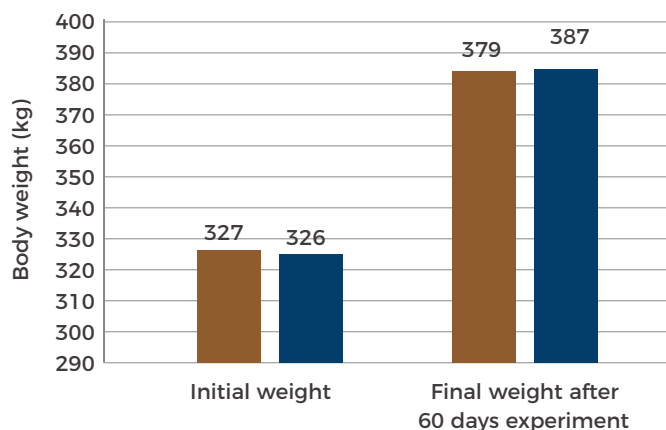


Figure 7. Influence of Fubon Yeast Cell Wall on weight gain of beef cattle

(George Rottinghaus, 2009)

■ Control
■ 20gYCW/head/day

Dosage

Species	Benefits	Dosage
Piglet	Relieve stress (weaning, transport), stabilize production Prevent disease, replace antibiotics	1-2kg/t
Sow	Enhance immunity Bind mycotoxins, reduce the toxic influence on reproductive performance	1~1.5kg/t
Broiler	Relieve stress, stabilize production Prevent disease, reduce mortality	0.5-1kg/t
Layer	Relieve stress , stabilize production Stable laying rate and prolong the peak of laying	0.5kg/t
Aquaculture	Improve survival rate Relieve stress, enhance the ability to adapt to the environment	1~2kg/t
Calves	Promote rumen development, improve daily gain	1 kg/t

Package 25kg/bag with polyethylene liner,or 600kg jumbo bag

Storage The shelf life is 24 months. Please keep in a cool and dry place.