Angel®

Animal Nutrition

Yeast Cell Wall

Natural and efficient immune enhancer

From fermenting *Saccharomyces cerevisiae*

Enriched in Mannan and β(1-3,1-6)-glucan

Natural immunity stimulator without side effects

FUBON

Yeast For Animal Nutrition

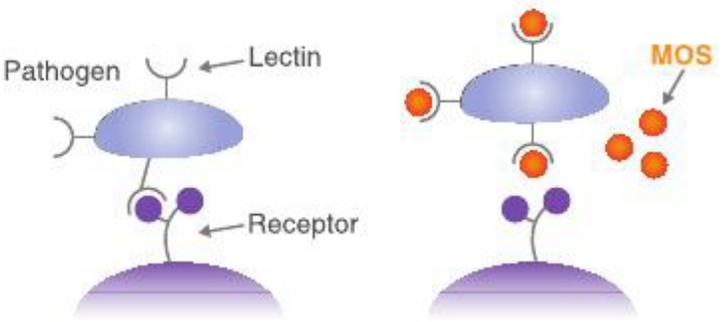
ANGEL YEAST CO., LTD.

Discription

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, and can increase immunity, block pathogens and bind mycotoxins (especially Zearalenone).

Efficacy

- Reduce mortality
- Replace antibiotics
- Bind mycotoxins
- Improve animal performance



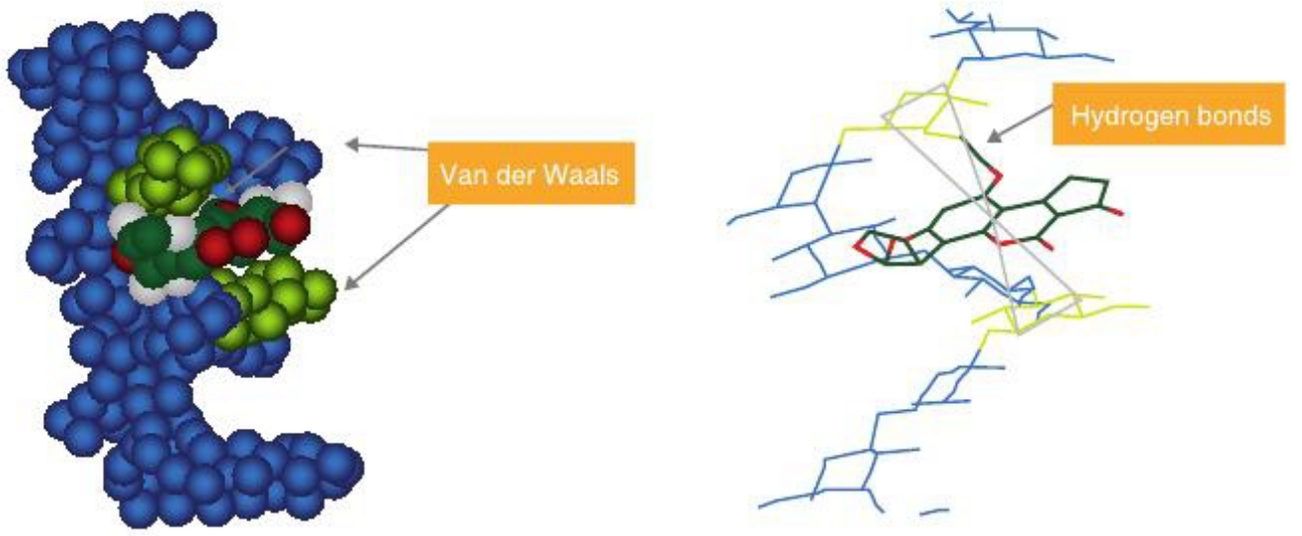
Mode of action

A. Block and excrete pathogens

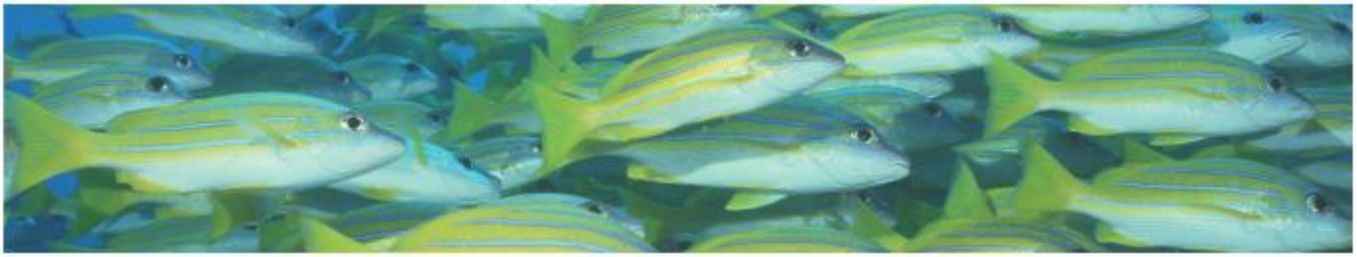
The mannan of yeast cell wall has similar structure with binding site of pathogens on the intestinal wall. Thus it can competitively bind the pathogens and interfere with the binding between pathogens and intestinal wall. Furthermore, as the mannan cannot be digested by pathogens and intestinal enzymes, 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. And 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.

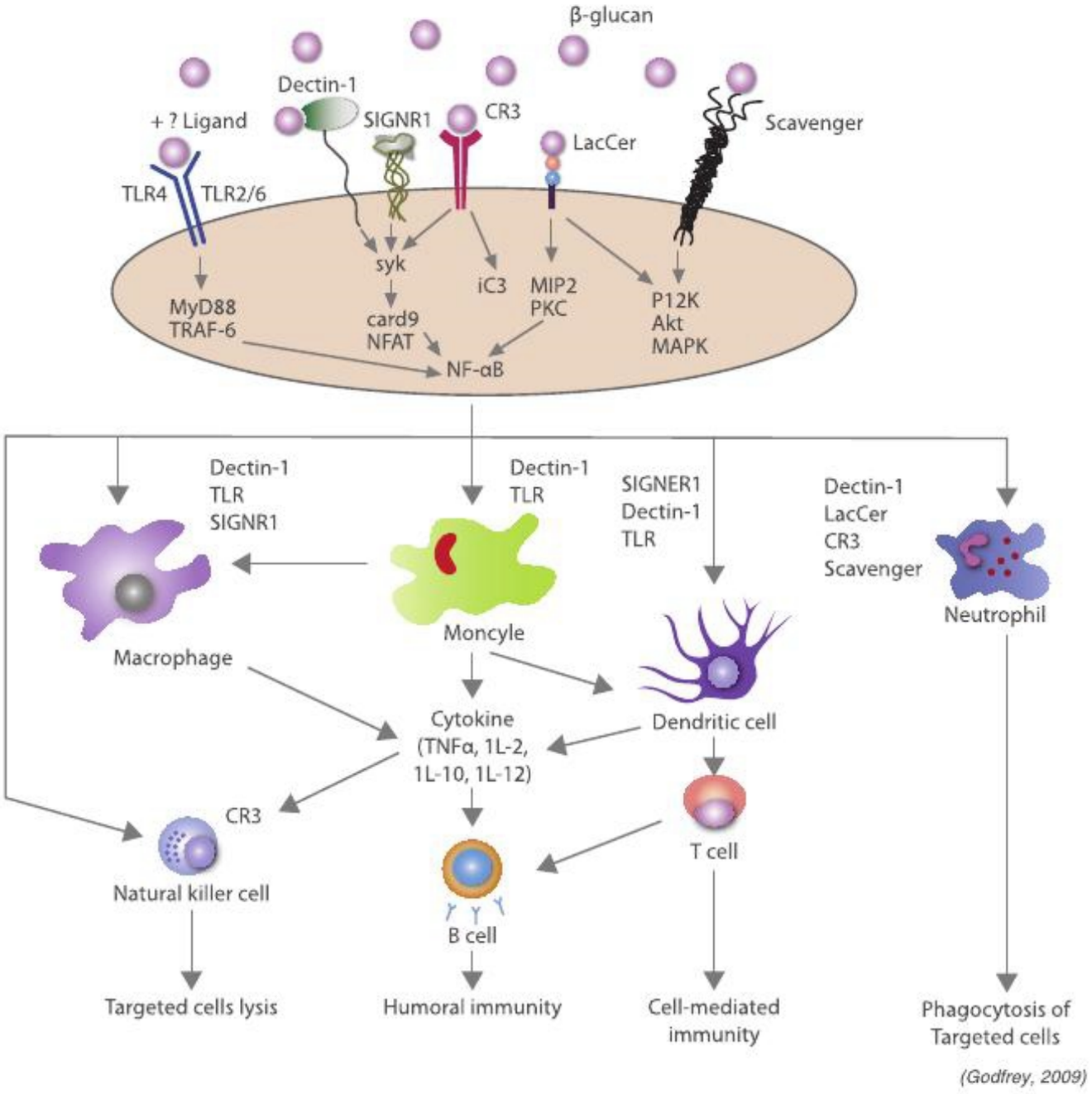


(A. Yiannikouris, 2006)



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.



(Godfrey, 2009)

Guaranteed analysis β-glucan ≥ 20%; Mannan ≥ 20%

Application trails

A. Fubon Yeast Cell Wall can block pathogens like Salmonella and E.. *Coli.*

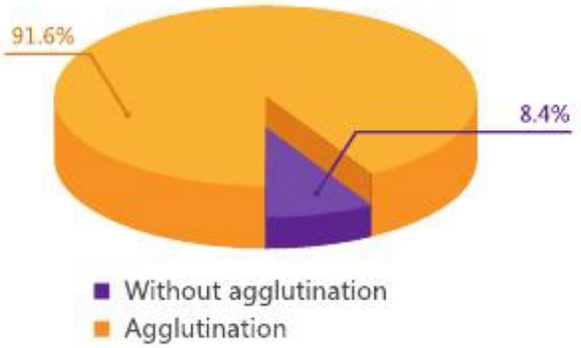


Figure 1 *in vitro* absorbility of *Salmonella* spp.

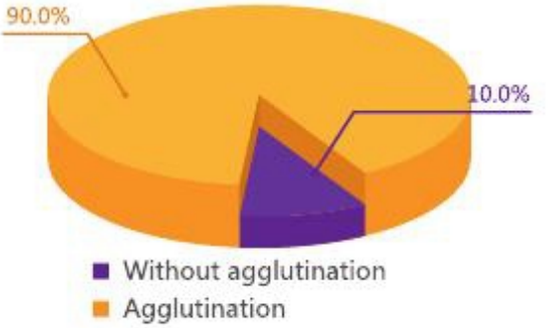


Figure 2. *in vitro* absorbility of E. *Coli*

(Sydney Hzrtz Alves et al., 2009)

B. Bind several kinds of mycotoxins, especially zearalenone

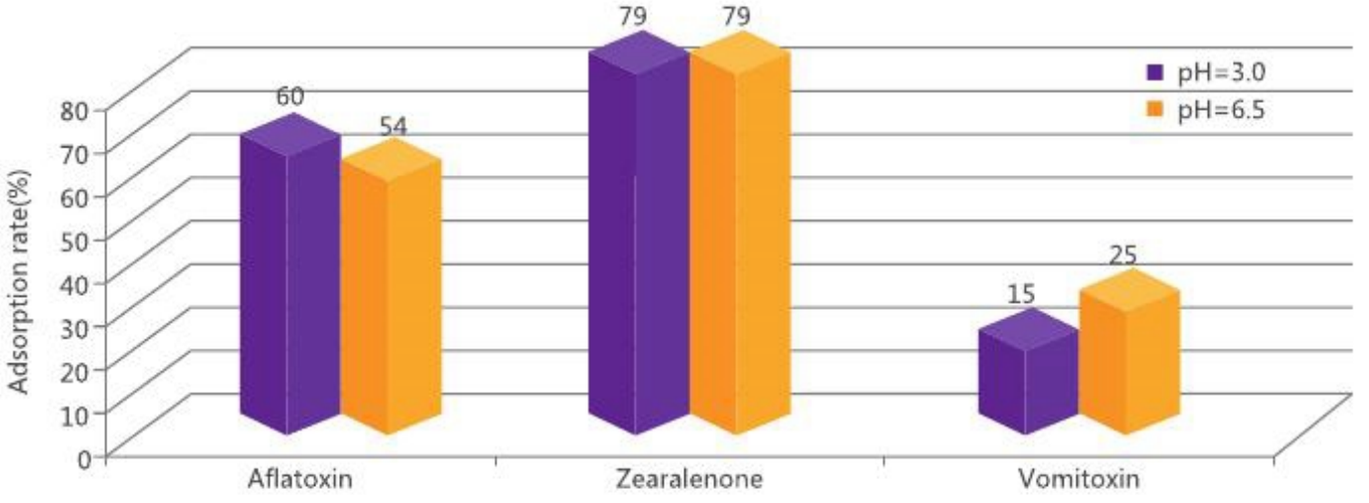


Figure 3. The mycotoxin adsorption rate of Fubon Yeast Cell Wall under different pH

(George Rottinghaus,2009)

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

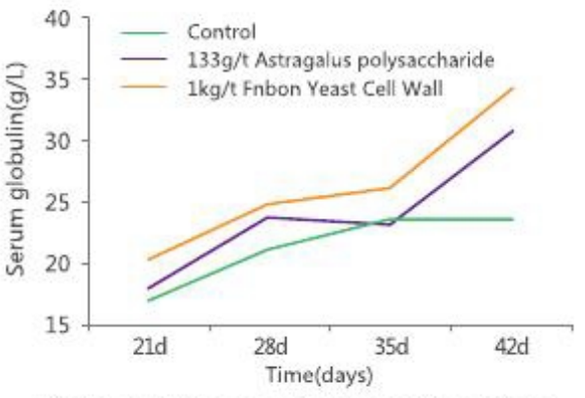


Figure 4. Influence on the globulin content in broiler serum

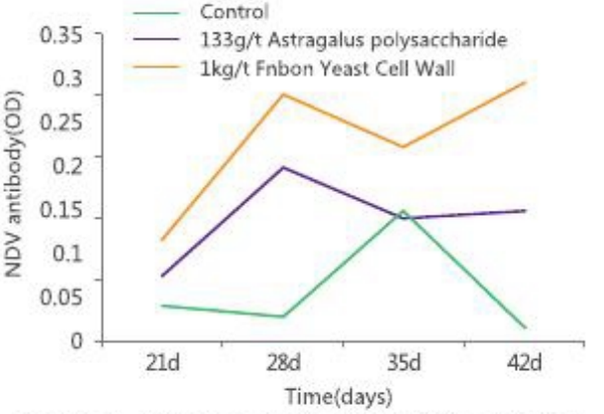


Figure 5. Influence on the NDV antibody levels of broiler serum

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

(Li chunsong, 2012)

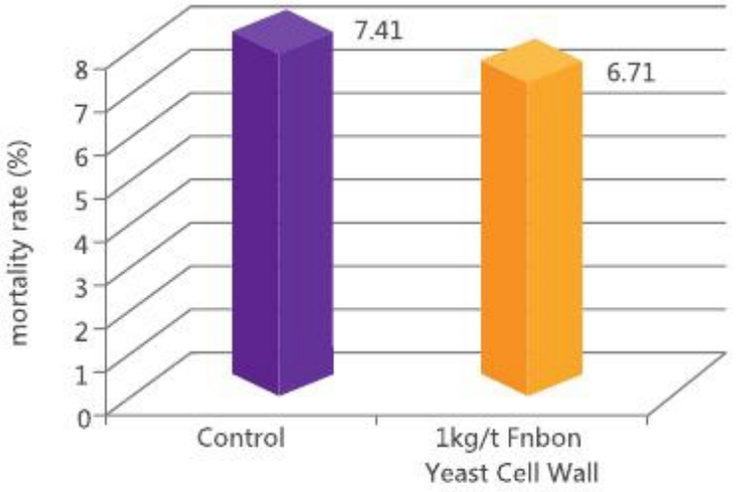
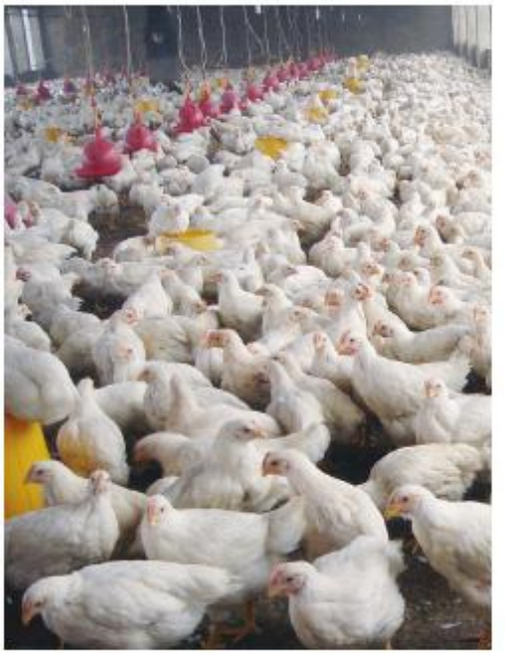


Figure 6. Influence of Fubon Yeast Cell Wall on the broiler mortality

Note: 600 day-old broilers, trials were performed 42ds. *(Huang Xin, 2013)*



D. Relieve stress, Improve the survival rate

Table 1. Influence of Fubon Yeast Cell Wall on anti-stress capacity of grass carp(*Ctenopharyngodon idellus*)

Group	Number of fish	Number of death	Mortality rate
1kg/t Yeast Cell Wall	100	59	59.0%
1kg/t Yeast Cell Wall	100	57	57.0%
Control	100	72	72.0%

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.

(Chen Changfu, 2013)

E. Improve production performance

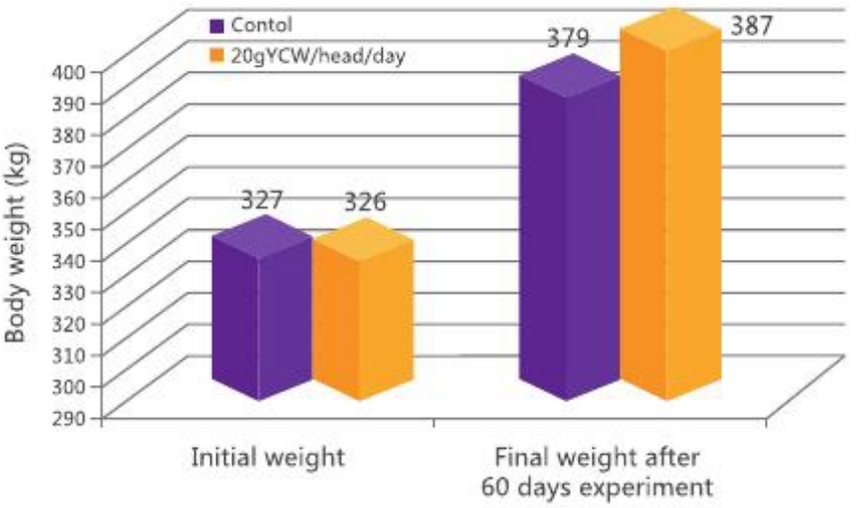


Figure 6. Influence of Fubon Yeast Cell Wall on weight gain of beef cattle

(George Rottinghaus,2009)

Dosage and usage

Species	Expected efficiency	Dosage
Piglet	Relieve stress (weaning, transport), stabilize production Prevent disease, replace antibiotics	2kg/t in greed feed 1~1.5kg/t in nursing feed
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	1kg/t for whole life addition
Breeding and Laying	Relieve stress , stabilize production Stable laying rate and prolong the peak of egg production	0.5~1kg/t for laying period
Aquaculture	Improve survival rate Relieve stress, enhance the ability to adapt to the environment	1~2kg/t
Ruminant	Promote rumen development, improve daily gain Promote rumen microbial growth, improve production performance	1kg/t for calves 5kg/t for growing and fatting period

Package 25kg/bag with polyethylene liner.

Storage In the cole and dry place. The shelf life is 24 months.

Attentions Please use up once it been opened or bind tighly after using.

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