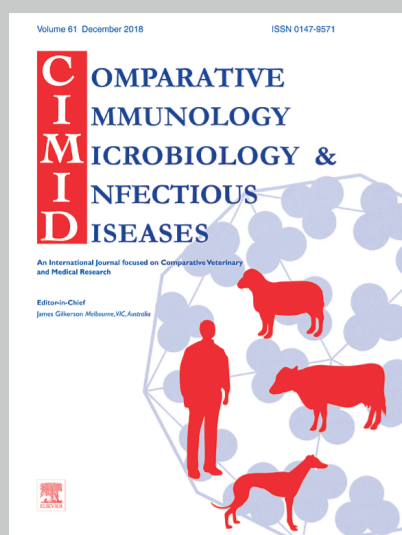


# THE EFFECT OF BETA-GLUCANS ON IMMUNITY IN DIFFERENT SPECIES

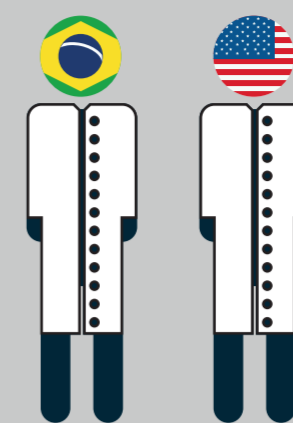


## PRESENTING THE STUDY



A paper presented in the journal of :

*Comparative immunology microbiology & infectious diseases*



Brazil

USA

Undertaken by researchers from 2 American countries

## IMMUNITY, IT'S ORGANISATION

### INNATE IMMUNITY

- Immediate
- No "learning" necessary
- Non-specific response to a pathogen



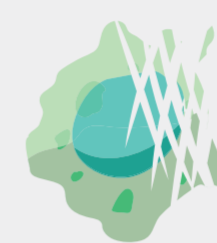
Innate immunity cells absorb and break down pathogens by phagocytosis

### ADAPTIVE (ACQUIRED) IMMUNITY

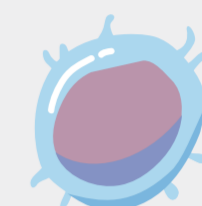
- Put into place slowly
- It must learn to recognise pathogens
- Highly specific response



Antibody production



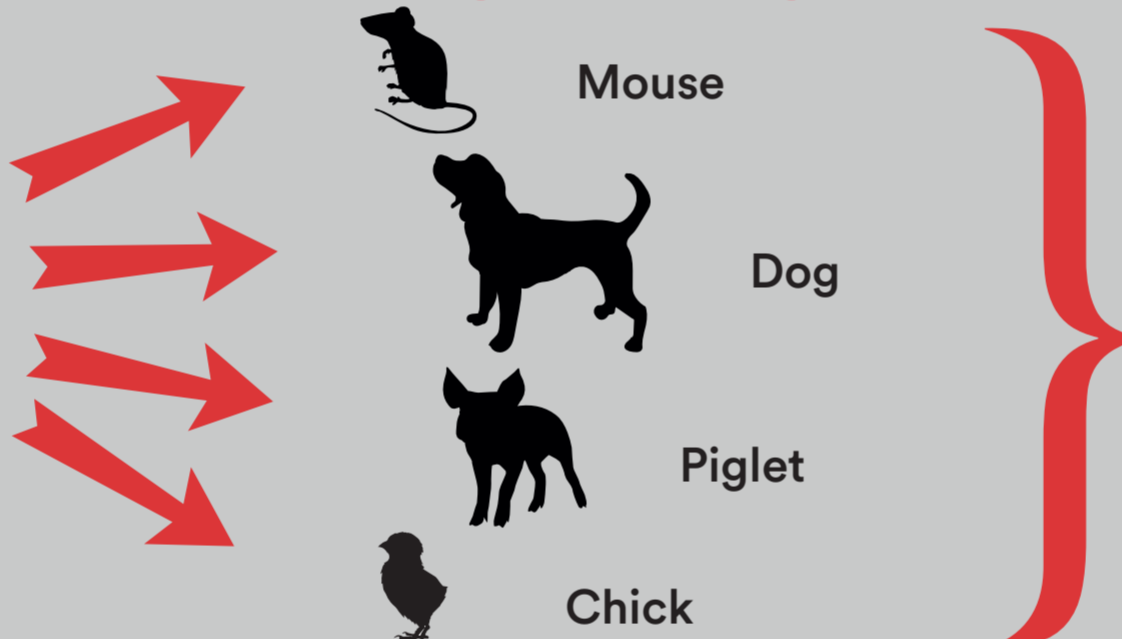
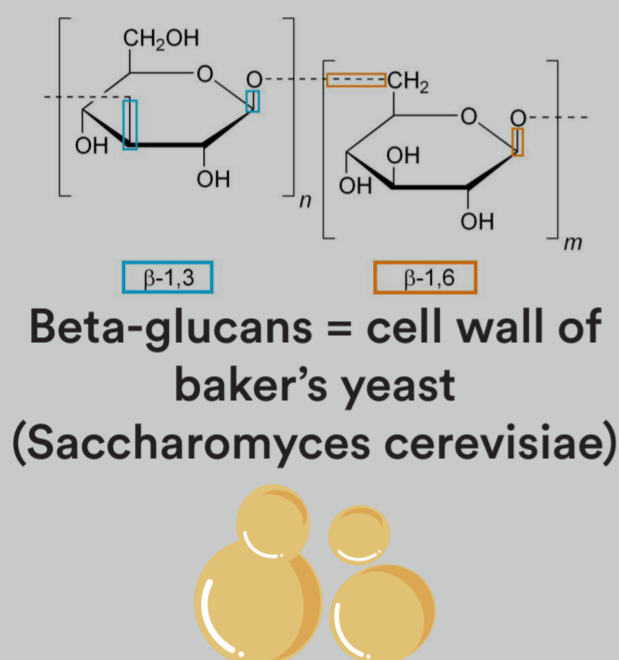
Destruction of infected cells



The specific functions of innate immunity cells are activated

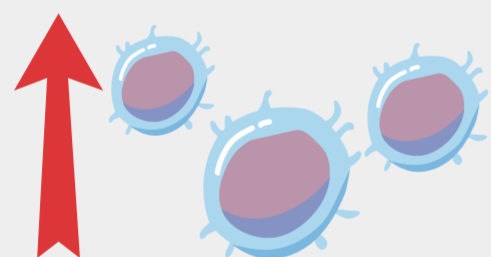
**Question: Is the immunostimulating effect of beta-glucans the same in different vertebrate species?**

## METHOD EMPLOYED



Supplementation with 25mg/kg/bodyweight of beta-glucans daily for 28 days

## THE FINDINGS



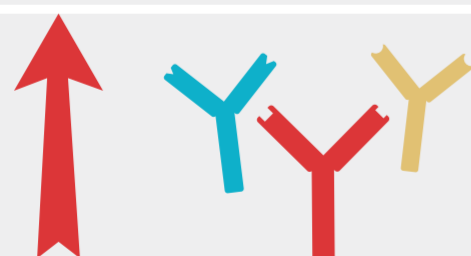
### INCREASED INNATE IMMUNE RESPONSE.

Increase in the production of IL2 → molecule which stimulates both innate and adaptive immune cells.



### INCREASED PHAGOCYTYC CAPACITY for:

- Neutrophils, antibacterial agents
- Monocytes, precursors of macrophages, which are very active on the phagocytosis front, but also regulate adaptive immunity.



### INCREASED CAPACITY FOR PRODUCING ANTIBODIES.

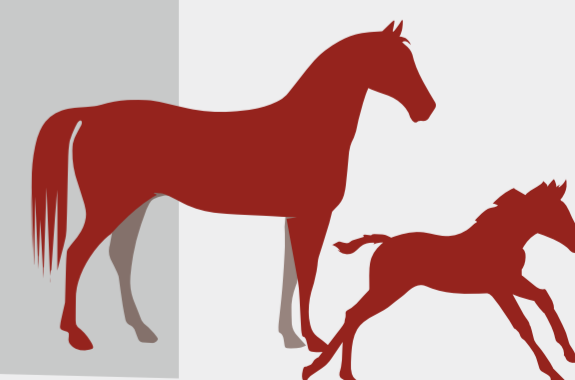
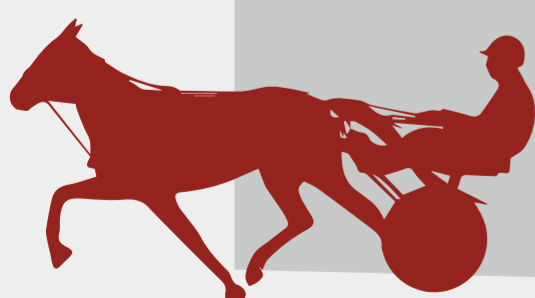
The production of antibodies following the injection of an unknown, thus potentially dangerous, molecule (antigen), is increased.

## AS A REMINDER

In the horse, beta-glucans stimulated :

Vaccination responses in trotters in training

Colostrum quality in broodmares



## CONCLUSION

**Beta-glucans stimulate the immune system in an equivalent manner no matter the species.**