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Adjuvant effects mediated by the carbohydrate recognition domain of *Agrocybe aegerita* lectin interacting with avian influenza H₉N₂ viral surface glycosylated proteins

Key words: Adjuvant, *Agrocybe aegerita* lectin, Carbohydrate recognition domain, Glycosylated protein, Avian influenza H₉N₂ virus

Research Summary

This research aims to evaluate the potential adjuvant effect of *Agrocybe aegerita* lectin (AAL). Experiments with mice reveal that rAAL-wt has adjuvant effect while rAAL-mut63H hasn't. Immunogold electron microscope, lectin blot and Co-IP assays further demonstrate that rAAL-wt's adjuvant activity has resulted from the interaction between its CRD and the glycosylated proteins HA and NA on the surface of the H9N2 virus.

Innovation points

- **Verification of recombinant AAL (rAAL-wt)'s adjuvant activity. (Fig. 1)**
- **Discovery of rAAL-mutR63H's loss of haemagglutination activity in vitro and adjuvant activity in vivo. (Fig. 1)**

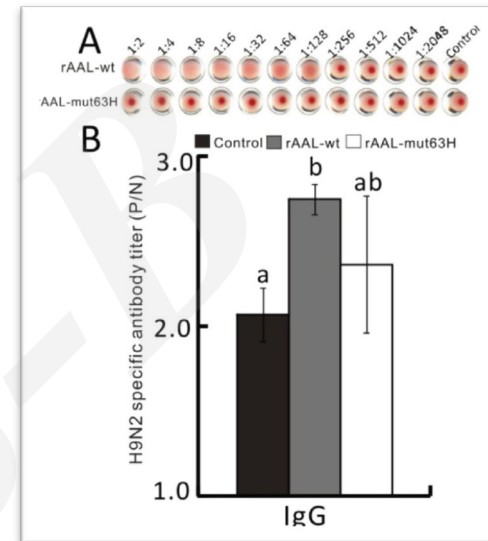


Figure 1

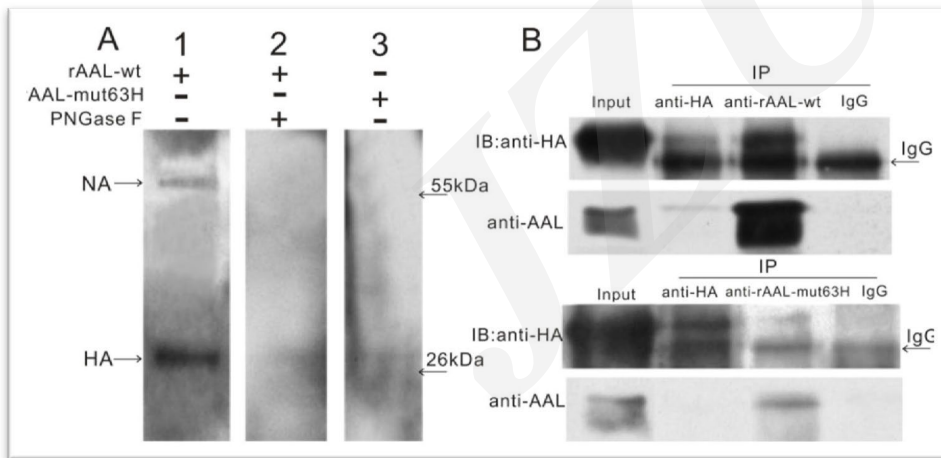


Figure 2

- **Revelation of AAL's CRD's interaction with HA and NA as vital to AAL's adjuvant effect. (Fig. 2)**

Innovation points

We speculate that AAL's CRD's interaction with HA and NA exposes antigenic sites to immune recognition (Fig. A), and that AAL's two CRDs may link two viral particles, leading to the formation of an antigen depot (Fig. B).

