

Anti-*Candida albicans* Egg Yolk Immunoglobulin: Cross Activity and Pilot Study

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Keywords: *Candida albicans*, IgY, adhesion inhibition

Objectives: The emergence of the drug-resistant *Candida* strains underscores the need
15 for development of new preventive strategies and alternative forms of treatment. We
have reported the effect of anti-*Candida albicans* (anti-CA) IgY in the mouse model.
The objectives of this study were (i) to investigate the cross activity of anti-CA IgY
against various *C. albicans* strains and *Candida* species and (ii) to investigate the effect
of anti-CA IgY in the reduction of the oral *Candida* count in elderly.

20 **Methods:** The cross activity of anti-CA IgY was examined by both micro-agglutination
and adhesion inhibition assays. In the micro-agglutination assay, *Candida* species were
incubated with anti-CA IgY and the agglutination was examined under the microscope.
The adhesion inhibition activity was examined in FaDu cells. The adhered colonies
were counted by using YPD agar. The effect of anti-CA IgY on oral *Candida* count was
25 examined in two volunteers. The experiment was extended for 6 months and divided to
3 phases. Different doses of anti-CA IgY were used. Saliva samples were examined
once a week.

Results: Anti-CA IgY showed various degrees of agglutination activity against different

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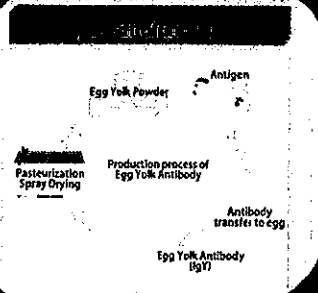
Production & Objectives

The emergence of the drug-resistant *Candida* strains underscores the need for development of new preventive strategies and alternative forms of treatment.

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Methods



Mix CA with different dilutions of anti-CA IgY in microtiter plate

Incubate at 37 °C for one hr

Examine the agglutination

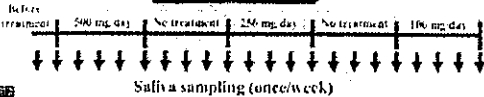
Mix anti-CA IgY with CA

Addition of mixture to FaDu cells

Incubate at 37 °C for one hr

Wash the non adherent CA

Count the adhered CFU



Summary of results

- Anti-CA IgY showed various degrees of agglutination activities against different *Candida* species.
- The adhered CFUs of *C. glabrata* to FaDu cells were significantly reduced after incubation with anti-CA IgY.
- In the pilot study, the oral *Candida* count was gradually declined to become under the count level (10 CFU/ml) within 3 weeks after the treatment. After stopping the treatment, *Candida* count was gradually increase again.

Conclusions

Anti-CA IgY showed a strong effect not only on *C. albicans* but also on other *Candida* species and expressed a strong effect on the reduction of oral *Candida* count in elderly.

Results

CA strain	Origin	Agglutination titer	CA strain	Agglutination titer
JCM (1542)	Skin lesion	128	<i>C. albicans</i>	64
JCM (1543)	Delicate zone	32	<i>C. glabrata</i>	32
GTC (654)	Nails	32	<i>C. parapsilosis</i>	32
GTC (1754)	Teeth	64	<i>C. krusei</i>	16
			<i>C. tropicalis</i>	16
			<i>C. guilliermondii</i>	32
			<i>C. dubliniensis</i>	16

