N Prapasarakul et al., J Microb Biochem Technol 2015, 5:4
http://dx.doi.org/10.4172/1948-5948.S1.014

OMICS International
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World Congress and Expo on
Applied Microbiology
August 18-20, 2015 Frankfurt, Germany

Biofilm production and antifungal activities of co-colonization between *Malassezia pachydermatis* and *Candida parapsilosis* isolated from canine seborrheic dermatitis

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Previously, we have reported on concurrent detection and frequency between *Malassezia (M.) pachydermatis* and *Candida (C.) parapsilosis*, associating stage of canine seborrhea dermatitis (SD). Thus, the consequence from co-colonization on skin may enhance their pathogenecity in term of biofilm production and antifungal response. The aims of the study were to characterize the biofilm formation derived from co-colonization between *M. pachydermatis* and *C. parapsilosis, in vitro*, and to determine antifungal activities of them. Each of 20 isolates of *M. pachydermatis* and *C. parapsilosis* were recovered from healthy (n=10) and SD (n=10) dogs. Genotyping and high level phospholipase production certain pathogenicity were confirmed by intergenic spacer 1 (IGS1) region analysis and semi-quantitative egg-yolk plate. Biofilm production was evaluated by crystal violet assay and scanning electron microscope (SEM). The antifungal susceptibilities against ketoconazole and itraconazole were determined by a broth microdilution method. Biofilm was observed by all single and mixed cultures within 24 hour incubation and had the highest amount within 72 h. There was no association of clinical sign from dog origin. Biofilm produced from the mixed culture was higher than that of single colonization (Pair *t*-test, $P<0.05$). The minimal inhibitory concentration values of yeasts with biofilm were much higher than that without biofilm (>530 times). The level of resistance to azole had no any significant difference between sessile and planktonic yeasts producing biofilm. The study suggested a strong production of biofilm from co-colonization of yeast pathogens might enhance a possibility to persist on skin lesion in dogs by their mutual symbiosis and incurable by antifungal treatment.

Biography

N Prapasarakul received his graduate degree from Faculty of Veterinary Science, Chulalongkorn University, in 1997 and his PhD from Tokyo University of Agriculture and Technology in 2003. He was granted the fellowship from Crowford foundation, Murdoch University, Western Australia in 2006. At present, he has been in charge for Head Department of Veterinary Microbiology in his graduated university and for editor of *Thai Journal of Veterinary Practitioner* since 2009. His research on veterinary microbiological theories, especially diagnosis, pathogenesis and microbial controls for bacteria and fungi has been continually running.

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