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## Vaccine potentials of recombinant mature cathepsin L1H against *Fasciola gigantica* in mice

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In *Fasciola gigantica* cathepsin L1H (CatL1H) is a family of predominant proteases that is expressed in caecal epithelial cells and secreted into the excretory-secretory products (ES). CatL1H isotype was expressed in early stage in the life cycle and the parasites used them for migration. Therefore, CatL1H is a plausible target for vaccination against this parasite. Recombinant mature *F. gigantica* CatL1H (rmatFgCatL1H) were expressed in *Escherichia coli* BL21. The vaccination was performed in Imprinting Control Region (ICR) mice (n=10) by subcutaneous injection with 50 µg of rmatFgCatL1H combined with Freund's adjuvant. Two weeks after the second boost, mice were infected with 15 metacercariae by the oral route. The percent protection of rmatFgCatL1 vaccines were estimated to be 57.2-60.5% when compared with non-vaccinated infected and adjuvant infected controls, respectively. By determining the levels of IgG1 and IgG2a in the immune sera, which are indicative of Th2 and Th1 immune responses, it was found that both Th1 and Th2 responses were significantly increased in rmatFgCatL1H-immunized groups compared with the control groups with higher levels of Th2 (IgG1) than Th1 (IgG2a). The levels of serum aspartate aminotransferase (AST) and alanine transaminase (ALT) in rmatFgCatL1H-immunized group showed significant decrease when compared with control groups. The pathological lesions of livers in vaccinated groups showed significant decrease when compared with control groups. This study indicates that rmatFgCatL1H has a potential as a vaccine candidate against *F. gigantica* in mice that similar to rproFgCatL1H and this potential will be tested in larger stock animals.

### Biography

Pornanan Kueakhai has completed his PhD from Mahidol University, Thailand. He is the Lecturer of Medical Technology, Faculty of Allied Health Sciences, Burapha University, Chonburi, Thailand. He has published more than 10 papers in reputed journals.

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