The pre-clinical studies of microalgae extract on application of infectious disease

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The extracts of *Spirulina platensis* were evidenced to have antiviral activity on HIV or EV71 in previous studies, therefore we examined the anti-influenza efficacy of cold water extract from *Spirulina platensis*, FE-L-APO, the API of Apomivir™ for an alternative drug development since influenza viruses are highly mutant to induce resistance to prevalent chemical compounds. The plaque forming reduction assay reveal the 1.5 mg/ml of FE-L-APO will each reduce the 50 to 70% of plaque forming various influenza virus strains. The time-of-addition assay and HAI (hemagglutination inhibition assay) test indicate the water extract of *Spirulina platensis* significantly deactivated influenza virus at early stage of viral replication cycle in vitro. In vivo study, administering 10 to 100 mg/kg/day of the *Spirulina platensis* extract to Influenza A and B infected mice twice daily for five days can improve the survival rates, severe weight loss (>30%), and pre-administrating 100 mg/kg/day of the extracts to influenza virus infected mice for 7 days also showed the prophylactic efficacy on weight loss. The water extract of *Spirulina platensis*, FE-L-APO can deactivate broad spectrum of influenza viruses in vitro, and can alleviate the level of severe weight loss and improve survival rates of influenza virus infected mice. For long used history and safety of *Spirulina platensis*, the *Spirulina* extract might be a good drug candidate for preventing and improving the severe pathogenicity of influenza virus infection.

Biography

Chun-Wei Cheh completed his Master of Science degree from Carnegie Mellon University and has worked at University of Pittsburgh Medical Center (UPMC) for a year as a Cancer Immunology Researcher. He is now working as the Special Assistant to President at FEBICO, a company specializes in the research and development of new drug extracted from microalgae.