

# Study of the protective effects and mechanism of *Gracilariopsis chiangii* extract in a mice model of influenza A virus infection

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## Outline

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## Abstract

*Gracilariopsis chiangii* is endemic to Taiwan, which belongs to the red algae, and the sulfate polysaccharides are mainly carrageenan. Influenza viruses are the most important source of viral respiratory infections in humans worldwide and can cause symptoms of respiratory illness and acute lung injury. In this study, mice will be infected with influenza A virus (H1N1) by spraying and investigate whether oral administration of *Gracilaria chiangii* extract (GCE) can achieve better prevention and treatment effects on influenza virus. The experimental results show that GCE have antioxidant effects from the three antioxidant assays of DPPH, ferrous ion chelation, and superoxide anion scavenging. In the inhibition rate of cytopathic assay, GCE can improve the survival rate of MDCK cells under pre-treatment, co-treatment and post-treatment. In animal experiments, GCE can prospectively promote the proliferation of T cells and B cells, and inhibit the secretion of pro-inflammatory factors, such as IFN- $\gamma$ , in the lungs, thereby improving the survival rate of mice. Based on the above results, GCE has a protective effect against influenza A virus infection in cell mode, and can inhibit the expression of inflammatory factors and improve lung injury and the survival rate of mice. indicating that GCE has antiviral potential. Overall, GCE has been shown to have antiviral potential.