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## EGYVIR: An immunomodulatory herbal extract with potent antiviral activity against SARS-CoV-2

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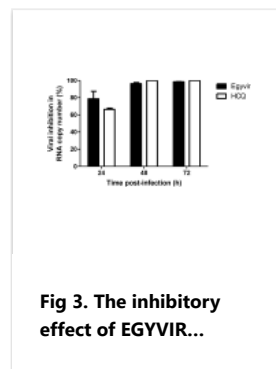
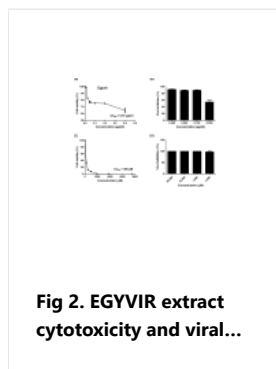
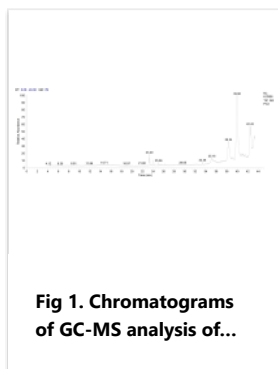
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### Abstract

Due to the challenges for developing vaccines in devastating pandemic situations of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), developing and screening of novel antiviral agents are peremptorily demanded. Herein, we developed EGYVIR as a potent immunomodulatory herbal extract with promising antiviral activity against SARS-CoV-2. It constitutes of a combination of black pepper extract with curcumin extract. The antiviral effect of EGYVIR extract is attributed to the two key phases of the disease in severe cases. First, the inhibition of the nuclear translocation of NF- $\kappa$ B p50, attenuating the SARS-CoV-2 infection-associated cytokine storm. Additionally, the EGYVIR extract has an in vitro virucidal effect for SARS-CoV-2. The in vitro study of EGYVIR extract against SARS-CoV-2 on Huh-7 cell lines, revealed the potential role of NF- $\kappa$ B/TNF $\alpha$ /IL-6 during the infection process. EGYVIR antagonizes the NF- $\kappa$ B pathway in-silico and in-vitro studies. Consequently, it has the potential to hinder the release of IL-6 and TNF $\alpha$ , decreasing the production of essential cytokines storm elements.

### Figures



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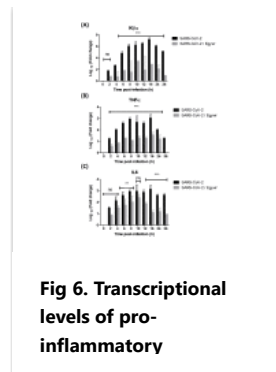
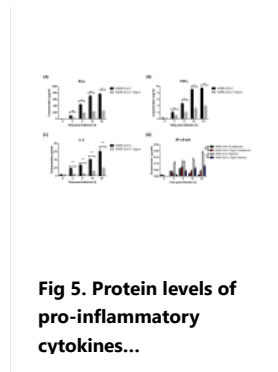
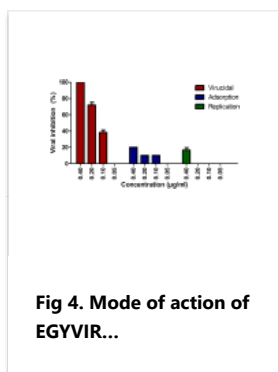
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