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Project Title	To screen the natural biological compound to decrease the cytokine level derived from T cells
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Report	
<p>Cytokine storms are the main cause of complications in some patients with severe COVID-19 infection. Here, we show that cinnamaldehyde, a common component of traditional Chinese medicine, was a molecule that effectively inhibits cytokine storms both in vitro and in vivo. It decreased inflammatory cytokine (such as IFN-γ, TNF-α, IL-6, and IL-2) production by murine peripheral blood and splenic T cells upon stimulation with ConA as well as after immunization with the murine corona virus MHV-A59 or the ORF3a protein of SARS-CoV-2. Cinnamaldehyde inhibited the activation of T cells by ConA or CD3/CD28 stimulation. In a coculture system of T cells and macrophages, cinnamaldehyde reduced the secretion of inflammatory cytokines from macrophages in a T-cell dependent manner. Furthermore, cinnamaldehyde decreased the ROS levels in activated T cells, which in turn reduced glycolysis and function of T cells. Taken together, cinnamaldehyde represents a potent candidate molecule for the effective treatment of patients infected with SARS-CoV-2 to prevent severe cytokine storms symptoms. These findings may provide insights into the control of excessive activation of immune cells in other pathological conditions.</p>	