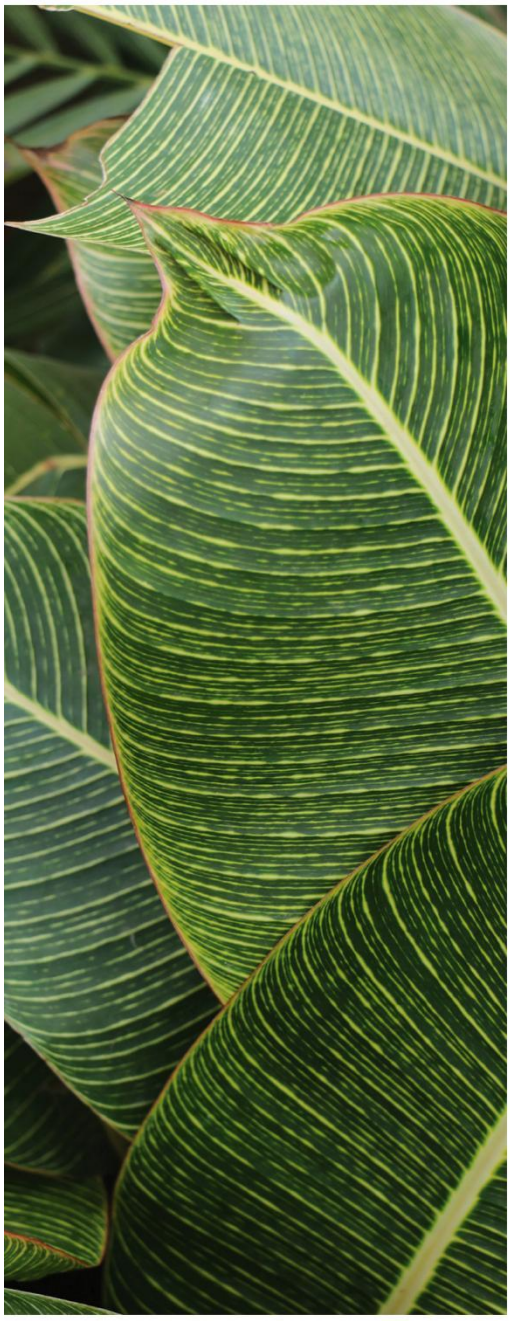
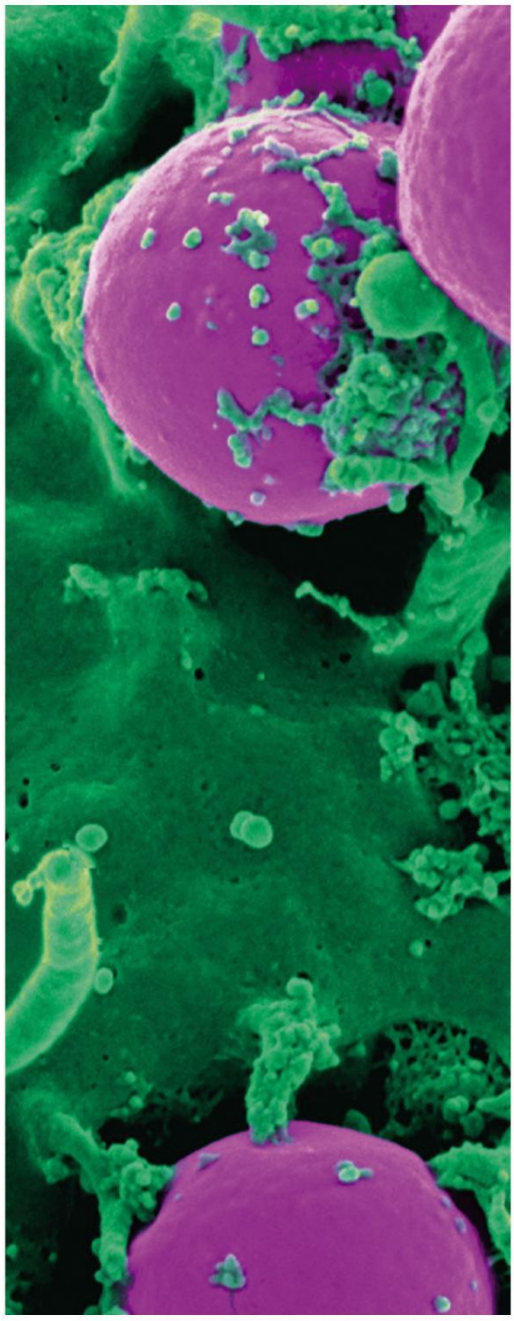
PROCEEDINGS OF 43RD ANNUAL SESSIONS 2023

The Institute of Biology
Sri Lanka





BIOLOGICAL WEALTH FOR ECONOMIC PROSPERITY

INSTITUTE OF BIOLOGY

SRI LANKA

PROCEEDINGS OF THE 43RD ANNUAL SESSIONS

Theme

Biological Wealth for Economic Prosperity

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Evaluation of *in vivo* effects of traditional Sri Lankan spice mix on inflammation and the production of reactive oxygen species by peritoneal cells

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The traditional Sri Lankan spice mix (TSSM) also known as raw curry powder is prepared by combining the seeds of coriander (*Coriandrum sativum*), cumin (*Cuminum cyminum*), and fennel (*Foeniculum vulgare*). Generally, spices contain bioactive compounds like phytochemicals with therapeutic potential that can boost immunity. As studies on TSSM are scarce, the potential effects of TSSM on inflammation and the production of reactive oxygen species (ROS) by peritoneal cells were investigated here. Two groups (test - TSSM; n=4, control – distilled water; n=4) of healthy adult male Wistar rats were orally gavaged daily for 6 weeks during this study. At the end of the 6th week, the carrageenan-induced rat paw oedema model was utilized in assessing the anti-inflammatory properties whereas the Nitroblue tetrazolium (NBT) assay was performed on carrageenan-induced infiltration of peritoneal cells to determine the effect of TSSM on the ROS production of peritoneal cells. The assessment of anti-inflammatory properties resulted in different rates of change in hourly paw volume between the two groups following the carrageenan administration. The mean peak volume displacement for the test group was observed at the 3rd hour of carrageenan treatment and for the control group, it was recorded at the 4th hour. This manifests better anti-inflammatory powers in the test group. Nevertheless, there was no significant difference between the changes in the volume displacement of the two groups in each hour ($p<0.05$). The statistical comparison of optical density values of NBT assay at 620 nm revealed no significant difference ($p<0.05$) in ROS production of peritoneal cells between the test and control groups. These results indicate that there is a window for higher concentrations of TSSM to possess better anti-inflammatory properties that could make TSSM a food adjunct that acts against hyperinflammation although no significant relationship between the TSSM and oxidative stress was unveiled.

Keywords: Anti-inflammation, Reactive oxygen species, Peritoneal cells, *In vivo*, Spices

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