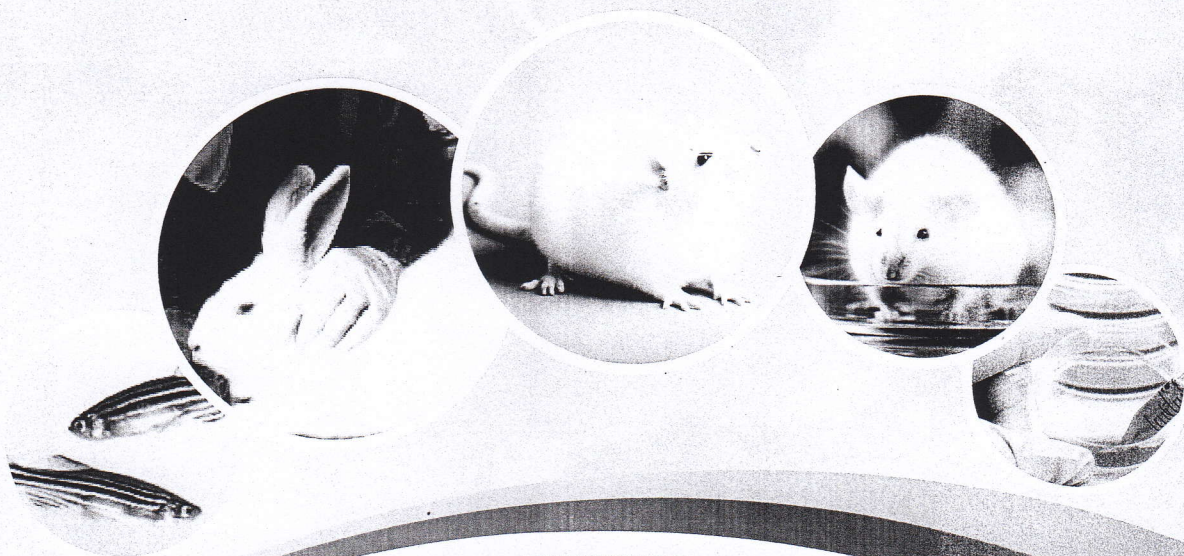


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Anti-tuberculosis activity of selected medicinal plants and *Pleurotus* mushrooms

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Introduction: Tuberculosis (TB) is a chronic disease caused by *Mycobacterium tuberculosis* (MTB) complex. The global TB epidemic has been aggravated by the emergence of disease outbreaks caused by multi-drug resistant and extensively drug-resistant strains. Hence, there is an urgent need to develop newer anti-TB drugs. This research was conducted to determine the *in-vitro*, anti-TB activity of selected medicinal plants and *Pleurotus* mushrooms found in Sri Lanka.

Methodology: Leaves of *Psychotria sarmentosa*, *Aponogeton crispus* and mushrooms *Pleurotus ostreatus* and *P. cystidiosus* were dried to a constant weight. The crude extracts were prepared by mixing 120 g from each material with distilled water (1,900 mL) and heated at a moderate temperature. The final volume was reduced to 240 mL. Freeze dried aqueous extracts were incorporated in Middle Brook 7H11 medium (1 mg/mL) using the pour plate method. The standard indirect agar proportion method was used to determine anti-TB susceptibility testing. Two ten-fold dilutions (10^{-2} and 10^{-4}) of McFarland 1 suspension of standard MTB strain H37Rv were inoculated on the media with the crude extract. The media prepared without adding any extract was the control. For each extract, triplicates were inoculated. The plates were incubated at 37 °C for 4-8 weeks until MTB colonies were visible. The inhibitory effect of each extract was calculated by the mean reduction of the number of colonies on the extract containing medium compared to the control, based on measures of central tendency.

Results and Discussion: The highest mean percentage inhibition was shown by *P. sarmentosa* (70.96 ± 3.11) followed by *A. crispus* (45.95 ± 4.77), *P. ostreatus* (43.42 ± 61.41) and *P. cystidiosus* (39.53 ± 55.91).

Conclusion: *P. sarmentosa* could be evaluated for its potential to be used as an anti-TB drug component.

Keywords: *Mycobacterium tuberculosis*, *Pleurotus ostreatus*, *Psychotria sarmentosa*, *Aponogeton crispus*, *Pleurotus cystidiosus*