

ABSTRACT

Expression of TLR-2, NF-kB, TNF- α , IFN- γ and TGF- β 1 in lung tissue damaged on mice infected with *Mycobacterium tuberculosis* obtained of Methanol Extract *Graftophyllum pictum* L. Griff

Atik Kurniawati

Introduction. Tuberculosis still the leading infection disease in the world. According to WHO report, it affected almost one third people in the world. It caused 2 millions death annually and almost 8 millions new people infected with this bacteria every year. On the other hand, there is no new drug for tuberculosis have been reported. *Graftophyllum pictum* L. Griff is a medicinal plant which able to treat inflammatory conditions and infection traditionally. The plant can reduced growth of *Mycobacterium tuberculosis* and influense the immune respons on mice were infected by Lipopolysaccharide of Gram positive bacteria.

Objectives. This research conducted to explain the mechanism of methanol extracts of *Graftophyllum pictum* L. Griff to inhibit the progression of lung tissue damaged by modulating expression of TLR-2, NF-kB, TNF- α , IFN- γ and TGF- β 1 on pulmonary lung mice infected with *Mycobacterium tuberculosis*

Method. The research method is an experimental laboratory in mice. By using thirty male mice aged 8-12 week were randomaly devided into 5 groups : control group 2 (K0 and K1) and 3 treatment groups (P1, P2 and P3). The group of K0 as a normal did not obtain methanol extracts of *Graftophyllum pictum* L. Griff and no infected of *Mycobacterium tuberculosis*. The group of K1, P1, P2 and P3 were infected by *Mycobacterium tuberculosis* using intratracheal method. The group of P1, P2 and P3 were obtain methanol extracts of *Graftophyllum pictum* L. Griff at 1,703 mg/kg bb, 3,406 mg/kg bb, 6,812 mg/kg bb, during 14 days orally. Expression of TLR-2, NF-kB, TNF- α , IFN- γ , TGF- β 1 were evaluated by immunohistochemistry. The lung tissue damaged on mice was analized by histopathological.

The result. The results have shown that the methanol extracts of *Graftophyllum pictum* L. Griff have been able to increase significantly expression of TLR-2 (p=0,00), NFk-B (p=0,00), TNF- α (p=0,00), IFN- γ (p=0,00) and decrease expression of TGF- β (p=0,17) of mice lung tissue that infected by *Mycobacterium tuberculosis*. The methanol extracts *Graftophyllum pictum* L. Griff has reduced significantly lung tissue damaged of mice that infected with *Mycobacterium tuberculosis* (p=0,00). Correlation test showed a positive correlation between the methanol extracts of *Graftophyllum pictum* L. Griff with TLR-2, NF-kB, TNF- α , IFN- γ . Negative correlation between the methanol extracts of *Graftophyllum pictum* L. Griff with TGF- β and the damaging of mice lung tissue.

Conclusion. The methanol extracts of *Graftophyllum pictum* L. Griff have active ingredients to increase expression of TLR-2, NF-kB, TNF- α , IFN- γ and decrease expression of TGF- β 1 and lung tissue damage in mice lung tissue that infected *Mycobacterium tuberculosis*.

Key words : Methanol extract of *Graftophyllum pictum* L. Griff, *Mycobacterium tuberculosis*, TLR-2, NF-kB, TNF- α , IFN- γ , TGF- β 1, lung tissue damage