

**Screening microbes isolated from Melalap, crocker range for inhibitors
against both prokaryotic and eukaryotic signal transduction and isocitrate
lyase in mycobacterium**

Abstract

In this study, 65 soil samples from underneath identified plants were collected upstream along the Melalap river. One hundred and thirty-six actinomycetes and ten microfungi were isolated using selective isolation methods. These pure isolates were cultured aerobically for secondary metabolite production. They were screened for inhibitors against three yeast-based molecular targeted screenings: protein phosphatase 1 (PPI), glycogen synthase kinase-3 β (GSK-3 β), Ras/ Raf-1 protein-protein interaction, and two Mycobacterium-based screening systems: isocitrate lyase (ICL) of the glyoxylate pathway and PhoP-PhoR two component signal transduction system. Three extracts (H11329, H11337 and H11402) were toxic to yeast in Ras/Raf-1 screening, nine extracts were toxic to yeast in PPI screening (H11293, H11298, H11300, H11301, H11302, H11304, H11317, H11339 and H11402). One actinomycete strain H11299 showed weak inhibition to PPI. Two extracts (H11329 and H11364) showed weak inhibitory activity and three extracts (H11339, H11337, H11402) showed toxicity in the GSK-3 β yeast screening. Five extracts (H11310, H11317, H11337, H11346 and H11383) showed toxic effect in the ICL screening system, and one extract (H11392) possibly showed weak inhibition to the PhoP-PhoR two component system. It is interesting that H11383 has the same inhibition characteristic as H7763, a presumptive ICL inhibitor with a wide partial inhibition zone on acetate plate (Dain, 2003).