ABSTRACT

Background: Candida Albicans (C. albicans) is the commonest being of Candida species colonizes the mucosal surfaces of all humans soon after birth and the risk of endogenous infection is ever-present. Candidiasis of the oral mucosa is a disease, recognized since antiquity which has gained renewed significance more recently as an infection frequently seen in AIDS patients and in other conditions. There are many ways to prevent the candida formation in the oral cavity. Nowadays, herbal therapy is often used as an antifungal agent to inhibit the growth the fungus. The herb used in this study is curry leaves (Murraya koenigii) extract. Curry leaves contain some active agents which are potential as an antifungal such as carbazole alkaloid, caumarin, flavanoid, tannin and polyphenol. Besides, curry leaves can induce the phagocytosis activation of macrophage which can help as immune response in reducing the growth of C. albicans. Purpose: The aim of the study is to find out the minimum inhibitory concentration and minimum fungicidal concentration of the curry leaves extract towards the growth of C. albicans and its effect on phagocytosis activation of macrophage. Method: Method used in this study for the effects of curry leaves extract towards C. albicans is dilution with the concentration of 12.5%, 9.375%, 8.75%, 6.25%, 5%, and 3.125%. Phagocytosis activation of macrophage with the method of phagocytosis index is used by counting the total of macrophage in the isolated peritoneal and number of C. albicans colonies before and after contacted with peritoneal macrophage. Result: The concentration of 3.125%, 5% and 6.25% showed the presence of C. albicans growth while there is no growth of C. albicans in the concentration of 8.75%, 9.375%, and 12.5%. Thus, 6.25% of curry leaves extract has the minimum ability to inhibit the growth of the C. albicans and 8.75% has the minimum fungicidal property. These two concentrations of curry leaves extract are observed for the phagocytosis activation of macrophage and 8.75% showed highest ability in inducing phagocytosis activation of macrophage compared to 6.25%. Conclusion: The conclusion of this study in finding minimum inhibitory concentration and the minimum fungicidal concentration of the curry leaves towards the growth of C. albicans is approximately at 6.25% and 8.75%. The highest ability in inducing phagocytosis activation of macrophage towards C. albicans growth is 8.75% curry leaves extract.

Keywords: curry leaves (Murraya koenigii) extract, C. albicans, minimum inhibitory concentration, minimum fungicidal concentration, phagocytosis activation of macrophage.