EXTRACTS OF OXALIS TRIANGULARIS SHOWS BROAD SPECTRUM ANTIBACTERIAL ACTIVITY IN ACIDIC CONDITION

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Abstract - Antimicrobial effects of various plants have been widely used to prevent diseases. Antibacterial activity in the extracts of Oxalis triangularis against five Gram-positive bacteria and three Gram-negative bacteria was investigated. The extracts of O. triangularis were tested the antibacterial activity against several Gram(+) and Gram(-) bacteria. The antibacterial activity was tested in the heat-treated extracts from leaves of O. triangularis as well as in the extracts of the various pH by NaOH addition. The extracts from leaves, stems, roots, and buds of O. triangularis showed broad spectrum antibacterial activity against all bacteria tested including Staphylococcus aureus, Bacillus cereus, Escherichia coli and Salmonella typhimurium. The heat-treated extracts from leaves of O. triangularis showed the similar antibacterial activity. However, the antibacterial activity dramatically disappeared by pH change of the Oxalis extracts. These results indicated that the broad spectrum antibacterial activity in O. triangularis is from water soluble, heat-stable substances active only in acidic pH condition. Therefore, the antibacterial substances would be oxalic acid or oxalate compounds which are abundant in Oxalis family plants.

Key words - Antibacterial Activity, Oxalis Triangularis, Oxalic Acid, pH, Food-born Pathogen