

ABSTRACTS

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Large Scale Cooperative Research in the
Field of Biotechnology

*Bioresources in Southeast Asia :
Its Diversity and Utilization*



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Study of Lectins from Wild Mushrooms

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Lectins are di- or multi-valent carbohydrate-binding proteins or glycoproteins of non-immune origin. The proteins are able to agglutinate cells and/or precipitate glycoconjugates, and currently employed in a number of biomedical and clinical research depending on their highly specific sugar-binding activity. Higher plants play their important roles as lectin sources. Lectins have also been reported to be occurred in animals and microorganisms. After our three-year-field surveys of wild mushroom species density and diversity in Tup-lan National Park and forests in Nakhon Ratchasima Province, Thailand, the data obtained challenge us to commence our study of lectins from wild mushrooms. Accumulations of lectins in crude extracts of forty-seven mushroom specimens (whole fruiting body) from a total of ten common genera (*Amanita*, *Boletus*, *Cantharellus*, *Lactarius*, *Lentinus*, *Lepiota*, *Lycoperdon*, *Marasmius*, *Russula* and *Termitomyces*) were detected by haemagglutination assay using human (A, B, and O blood groups) and animal (goose, guinea pig, mouse, rabbit, and rat) red blood cells. An extract of *Amanita* specimen strongly agglutinated both human and animal (rat and guinea pig) red blood cells. Crude extracts of *Lepiota*, *Lycoperdon* and *Termitomyces* specimens were found to be predominantly haemagglutinating for rat red blood cells. The purification and preliminary characterization of these mushroom lectins is being investigated.

Keywords: lectins, glycoconjugates, wild mushrooms