P93

Microbial Inhibition and Antioxidation of the Extracts from *Tetragonia tetragonioides*

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Tetragonia tetragonioides has long been used as a traditional remedy for stomach cancer and furuncle. We investigated antibacterial and antioxidant activity of the solvent extracts of *Tetragonia tetragonioides.* The solvent fractions were extracted by 100% methanol (MeOH) and successively extracted by *n*-hexane, methyl chloride(CH_2Cl_2) and ethyl acetate (EtOAc). Antibacterial activity of the extracts was investigated against several microorganisms. The antibacterial activity was determined by an agar-well diffusion method and expressed as the average diameter of the zone inhibiting bacterial growth around the wells. The minimum inhibitory concentration (MIC) of the active extracts was determined by using the micro-plate dilution assay. The CH_2Cl_2 and EtOAc extracts exhibited a significant antibacterial activity against both Gram-positive and Gram-negative bacteria. Antioxidant activites of solvent fractions from *Tetragonia tetragonioides* were examined by the ferric thiocyanate method, reducing power, metal chelating activity and free radical scavenging assay. The CH_2Cl_2 and EtOAc extracts of *Tetragonia tetragonioides* was found to exhibit a distinctive antioxidant activity. In addition, the structures of the CH_2Cl_2 extract were fully characterized by analysis of physical and spectral data.

P94

Production of Mannose-Binding Protein cDNA from Rat Liver and Recombinant Protein using a Bacterial Expression System

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The innate immune system is important for the first line of host defence against infectious agents, which have penetrated the mechanical barriers. It is comprised of soluble and membrane bound proteins with a predefined specificity, in many cases involving carbohydrate moieties. Mannose-binding protein (MBP or mannan-binding lectin, MBL) is a serum protein that is synthesized in the liver as part of the acute phase response. MBP binds to carbohydrate structures presented by a wide range of pathogenic bacteria, viruses, fungi, and parasites. MBP is synthesized as a monomer that has a carboxy-terminal carbohydrate recognition domain (CRD), a neck region and a collagen region. Monomers form trimers, and trimers form multimers of trimers, with a hexamer of trimers representing the highest order of trimers. Low MBP level was reported to be the most frequent immuno-deficiency. Although extensive studies have yielded detailed information on the structure of MBL, functions of the MBL complex is still incomplete. We, here, present cloning process of MBP cDNA from the rat liver and production of recombinant MBP protein using a bacterial expression system in order to produce anti-MBP polyclonal antibody. MBP cDNA, recombinant protein and anti-MBP antibody will be great arsenals to dissect cellular biochemistry of MBP.