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Fingerprinting of natural product by eastern blotting using monoclonal antibodies

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We prepared many kinds of monoclonal antibodies (MAbs) against natural products and developed a new staining method using MAb named as Eastern blotting. Glycosides like ginsenoside were developed by TLC, and the TLC plate was covered by PVDF or PES membrane and blotted. The membrane was treated with NaIO4, and then with carrier protein resulting in glycoside-carrier protein conjugates on membrane. In the case of non-glycoside natural product like aristolochic acids, the conjugate with carrier protein was synthesized by appropriate pathway on the membrane. Peroxidase labeled secondary MAb and then substrate were added, successively. Several ginsengs were analyzed to find out unknown ginsenosides in American and Japanese ginseng by this fingerprinting. Also we separated ginsenosides using affinity column combined MAb from the crude extract. The other bioactive glycosides like saikosaponins and glycyrrhizin can be stained and applied for fingerprinting analysis. Aristolochic acids having kidney toxicity in *Alistolochia* spp. were separated by TLC and then blotted onto a PES membrane by employing a modified carbodiimide method. The resulting membrane-bound aristolochic acids-protein conjugates can be stained by Eastern blotting and fingerprinting. The staining of aristolochic acid in mouse kidney tissues was succeeded. Moreover, we detected sequensed and determined a target protein against aristolochic acid in mouse kidney cell lines using anti-aristolochic acid MAb. These related results will be also discussed.

Biography

Yukihiro Shoyama worked in MGH as a Post-doctor in 1975. During 1978 to 1991, he worked as an Associate Professor and as a Full Professor during 1991 to 2007 in Kyushu University. During these periods he managed as the director of Pharmacognosy department, the director of herbal garden and the dean ship (2004-2006). He moved to Faculty of Pharmaceutical Sciences, Nagasaki International University as a Full Professor from 2007. He had efforts for the President of Japanese Society of Pharmacognosy (2007-2008) and Vice Chairperson of Specialty Committee of TCM Pharmaceutical Chemistry of World Federation of Chinese Medicine Societies (2012). His research interests are marihuana studies, monoclonal antibodies against natural product, biotechnology of medicinal plants and bioactive natural products.

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