

### เอกสารอ้างอิง

- เกศจี เม่งคำพัน, อติพล พัฒนียะ, ธีรยศ วิทิตสุวรรณกุล และราพีพรรณ วิทิตสุวรรณกุล. 2544. เล คตินประเทติโอลิปิดจากพืช การประชุมวิชาการวิทยาศาสตร์และเทคโนโลยีแห่ง ประเทศไทยครั้งที่ 27 หน้า 570
- ขวัญจิตรา สันติประชา และวัลลภ สันติประชา. 2539. ผลของช่วงการเก็บเกี่ยวและขนาดของเมล็ด พันธุ์ที่มีต่อคุณภาพของเมล็ดพันธุ์ถั่วฝักยาวพันธุ์การค้า. ว. สงขลานครินทร์ วทท. 18: 169-176.
- เมฆ จันทน์ประยูร. 2541. ผักสวนครัวก้าวสำคัญแห่งการพัฒนา. ผักสวนครัว. กรุงเทพ : ไทยควรศน์
- Allen, A.K. and Neuberger A. 1972. The Purification and some Properties of Wheat-Germ Agglutinin. *Biochem. J.* 130: 35P
- Allen, A.K. 1979. A lectin from the exudate of the fruit of vegetable marrow (*cucurbita pepo*) that has a specific for  $\beta$ -1,4-linked N-acetylglucosamine oligosaccharides. *Biochem. J.* 183: 133-137.
- Arason, G.J. 1996. Lectins as defence molecules in vertebrates and invertebrates. *Fish & Shellfish Immun.* 6: 277-289
- Archer, B.L. and Audley, B.G. 1973. Rubber, *gutta percha* and *chicle*. ( Nord FF, Miller LP, eds). *Phytochem.* 2: 310-343.
- Ayourba, A., Causse, H., Van Damme, E.J.M., Peumans, W.J., Cambillau, C. and Rouge, P. 1994. Interactions of plant lectins with the components of the bacterial cell wall peptidoglycan. *Biochem. Syst. Ecol.* 22: 153-159.
- Baenziger, J.U. and Maynard, Y. 1980. Human hepatic lectin. *J. Biol. Chem.* 255: 4607-4613.
- Barkai-Golan, R., Mirelman, D. and Sharon, N. 1978. studies on growth inhibition by lectins of *Penicillia* and *Aspergilli*. *Arch microbiol.* 116:119-121.

- Banerjee, S., Chaki, J., Bhowal, J. and Chatterjee, B.P. 2003. Mucin binding mitogenic lectin from fresh water Indian gastropod *Belamyia bengalensis*: purification and molecular characterization. *Arch. Biochem. Biophys.* 421:125-134.
- Barodes, S.H. 1988. Soluble lectin: a new class of extracellular proteins. *Science*. 223.
- Barondes, S.H. , Cooper, D.N., Gitt, M.A. and Leffler, H. 1994. Galectin. Structure and function of large family of animal lectin *J. Biol .Chem.* 266: 20807-20810.
- Beeley, J.G. 1985. In glycoprotein and proteoglycan techniques. *Elsevier*, New York. 16: 307-318.
- Bishayee, S. and Dorai, D.T. 1980. Isolation and characterization of a sialic acid-binding lectin (carcinoscorpin) from Indian horseshoe crab *Carcinoscopius rotundacauda*. *Biochim.Biophys. Act.* 623(1): 89-97.
- Bloch, R and Burger M.M. 1974. Purification of Wheat germ agglutinin using affinity chromatography on chitin. *Biochem. Biophys. Res. Commun.* 58: 13-19.
- Bradford, M.M. 1976. A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. *Anal. Biochem.* 72:248-254.
- Broekaert, W.F., Parijs, J.V., Leyns, E., Joos, H. and Peumans, W.J. 1989. A chitin-binding lectin from stinging nettle rhizomes with antifungal properties. *Science*. 245: 1100-1102.
- Bonfiles, E., Depierreux, C., Midoux, P., Thuong, NT., Monsigny, M., Roche, A.C. 1992. Drug targeting:synthesis and endocytosis of oligonucleotide-noeglycoprotein conjugate .*Nucleic Acids Res.* 20:4621-4629.
- Bulgakov, A.A., Park, K., Choi, K.S., Lim, H.K. and Cho, M. 2004. Purification and characterization of a lectin isolated from the Manila clam *Ruditapes philippinarum* in Korea. *Fish & Shellfish Immunol.* 16:487-499.
- Carter, W.G. and Etzler, M.E. 1975a. Isolation, Characterization, and Subunit Structures of multiple from *Dolichos biflorus* lectin. *J. Biol. Chem.* 250: 2756-2762.
- Carter, W.G. and Etzler, M.E. 1975b. Isolation and characterization of subunit from the predominant from of *Dolichos biflorus* lectin. *Biochem.* 14(12): 2685-2689.

- Castresana, M.C., Serra, M.T., Rodriguez, J.F. and Tejerina, G. 1987. Distribution of lectin during the life cycle of *Phaseolus vulgaris L.* *Plant Science.* 48: 79-88.
- Chrispeels, M.J. and Raikhel, N.V. 1991. Lectins, lectin genes, and there role in legumerhizobium symbiosis. *Ann. Biol.* 9: 149-164.
- Cominetti, M.R., Marques, M.R.F., Lorenzini, D.M., Lofgren, S.E., Daffre, S. and Barracco, M.A. 2002. Characterization and partial purification of a lectin from the hemolymph of the white shrimp *Litopenaeus schmitti*. *Delol & Comp Immunol.* 26:715-721.
- Cummings, R.D. and Kornfeld, S. 1982. Characterizaton of the structural determinants required for the high affinity interaction of asparagine linked oligosaccharide with immobilized *Phaseolus vulgaris* leukoagglutinating and erytroagglutinating lectin. *J. Biochem* 257:11230-11234.
- Dahms, N.M., and Hancock, M.K. 2002. P-type lectins. *Biochem. Biophys Acta.* 1572:317-340.
- Danguy, A., Camby, I. and Kiss, R. 2002. Galectin and cancer. *Biochim Biophys Acta.* 1572:285-293.
- Drickamer, K. and Taylor, M.E. 1993. Biological of animal lectin. *Ann Rev I Biol.* 9: 237-264.
- Edmundson, A.B., Ely, K.R., Sly, D.A., Westholm, F.A., Powers, D. and Leiner, I.E. 1971. Isolation and characterization of concanavalin A polypeptide chains. *Biochem.* 10:3554-3559.
- Etzler, M.E. 1985. Plant lectin: molecular and biological aspect. *Ann. Rev. Plant. Physiol.* 36: 209-234.
- Ewart, K.V. and Fletcher, G.L. 1993. Herring antifreeze protein: primary structure and evidence for a C-type lectin evolutionary origin. *Molecular Marine Biol biotechnol.* 2: 20-27.
- Ewart, K.V., Rubinsky, B. and Fletcher, G.L. 1992. Structural and functional similarity between fish antifreeze protein and calcium-dependent lectin. *Biochem. Biophys. Res. com.* 185: 335-340.

- Fock, W.L., Chen, C.L., Lam, T.J. and Sin, Y.M. 2000. Isolation and characterization of a serum lectin from blue gourami, *Trichogaster trichopterus* (Pallus). *Fish & Shellfish Immunology*. 10:489-504.
- Folch, J. and Lees, M. 1951. Proteolipides, a new type of tissue lipoproteins: their isolation from Brain. *J. Biol. Chem.* 191(2): 807-817.
- Fragkiadakis, G., Stratakis, E. 1995. Characterization of hemolymph lectin in the prawn *Paapenaeus longirostris*. *J. Invert. Pathol.* 65:111-117.
- Freire, M.G.M., Gomes, V.M., Corsini, R.E., Machado, O.L.T., Simone, S.G.D., Novello, J.C., Marangoni, S. and Macedo, M.L.R. 2002. Isolation and partial characterization of lectin from *Talisia esculenta* seeds that interferes with fungal growth. *Plant Physiol. Biochem.* 40: 61-68.
- Gabius, H.J. 1987. Targeting of neoglycoprotein-drug conjugates to human tumor cells via endogenous lectins. *Ann NY Acad Sci.* 507:337-338.
- Giga, Y., Ikai, A. and Takahashi, K. 1987. The complete amino acid sequence of echinodin, a lectin from the coelomic fluid of the sea urchin *Anthocidaris crassispina*. *J .Biol. Chem.* 262:6197-6203.
- Goldstein, I.J., Hughes, R.C., Monsigny, M., Osawa, T. and Sharon, N. 1980. What should be called a lectin. *Nature*. 285: 66.
- Gould, N.R. and Scheinberg, S.L. 1970. Isolation and partial characterization of two anti-A hemagglutinin from *Phaseolus lunatus*. *Arch. Biochem. Biophys.* 137: 1-11.
- Gusils, C., Palacios, J., Gonzalez, S. and Oliver, G. 1999. Lectin-like protein fractions in lactic acid bacteria isolation from chickens. *Biol. Pharmaceu. Bulletin*. 22: 11-15.
- Hamblin, J., Kent, S.P. 1973. Possible role of phytohemagglutinin in *Phaseolus vulgaris*. *Nature New Biol.* 245: 28-30.
- Hammarstrom, S., Hammarstrom, M.L., Sundblad, G., Arnarp, J., Lonngren, J., 1982. Mitogenic leukoagglutinin from *Phaseolus vulgaris* binds to a pentosaccharide unit in N-acetyllactosamine type glycoprotein glycans. *Proc Natl Acad Sci USA*. 79:1611-1615.

- Himeshima, T., Hatakeyama, T. and Yamasaki, N. 1994. Amino acid sequence of a lectin from the sea cucumber, *Stichopus japonicus*, and its structural relationship to the C-type animal lectin family. *J. Biochem.* 15: 689-692.
- Hirabayashi, J. and Kasai, K. 1993. The family of metazoan metal-independent beta-galactoside-binding lectins: structure, function and molecular evolution. *Glycobiology*. 3: 297-304.
- Hirabayashi, J., Kusumoki, T. and Kansai, K. 1991. complete primary structure of a galactose-specific lectin the venom of the rattlesnake *Crotalus atrox*. Homologies with  $\text{Ca}^{2+}$ -dependent lectin. *J. Biol. Chem.* 266: 2320-2326.
- Hirabayashi, J., Satoh, M. and Kasai, K. 1992. Evidence that *Caenorhabditis elegans* 32 kDa beta-galactoside-binding protein is homologous to vertebrate beta-galactoside-binding lectin. cDNA cloning and deduce amino acid sequence. *J. Biol. Chem.* 267:15485-15490.
- Holmskov, U., Malhotra, R., Sim, R.B. and Jensenius, J.C. 1994. Collectins: collagenous C-type lectins of the innate immune defense system. *Immunology Today*. 15:67-73.
- Howard, I. K., Sage, H. J. and Horton, C. S. 1972. Studies on the appearance and location of hemagglutinins from a common lentil during the life cycle of the plant. *Arch. Biochem. Biophys.* 149:323-326[Medline].
- Huesing, J.E., Murdock, L.L. and Shade, R.E. 1991. Rice and stinging nettle lectins: insecticidal activity similar to wheat germ agglutinin. *Phytochem.* 30: 3565-3568.
- Jensen, L.E., Thiel, S., Petersen, T.E. and Jensenius, J.C. A Rainbow Trout Lectin with Multimeric Structure. *Comp. Biochem. Physiol.* 16b 385-390.
- Jones, D.A. 1964. The lectin in the seed of *Vicia cracca* a population study and apossible function for the lectin. *Heredity*. 19: 459-469.
- Jung, W.K., Park, P.J. and KIM, S.K. 2003. Purification and characterization of a new from the hard roe of skipjack tuna, *Katsuwonus pelamis*. *Inter. J. Biochem.* 35:255-265.

- Kalsi, G., Das, H.R., Babu, C.R. and Das, R.H. 2003. Isolation and characterization of a lectin from peanut root. *Biochim Biophys Acta.* 1117:114-119.
- Kamemura, K., Furuichi, Y., Umekawa, H. and Takahashi, T. 1993. Purification and characterization of novel lectins from Great Northern bean, *Phaseolus vulgaris* L. *Biochim. Biophys. Acta.* 1158: 181-188.
- Kang, H.C., Ardourel, M.Y., Guerin, B., Monsigny, M. and Delmotte, F.M. 1998. Purification of two lectins from a nopaline *Agrobacterium tumefaciens* stain. *Biochim.* 80: 87-94.
- Kawagishi, H., Mori, H., Uno, A., Kimura, A. and Chiba, S. 1994. A sialic acid-binding lectin from the mushroom *Hericium erinaceum*. *FEBS Letters.* 340: 56-58.
- Kawagishi, H., Takagi, J., Taira, T., Murata, T. and Usui, T. 2001. Purification and characterization of a lectin from the mushroom *Mycoleptodonoides aitchisonii*. *Phytochem.* 56: 53-58.
- Kawagishi, H., Wasa, T., Murata, T., Usui, T., Kimura, A. and Chiba, S. 1996. Two N-acetylgalactosamine-specific lectins from *Phaeolepiota aurea*. *Phytochem.* 41: 1013-1016.
- Kawagishi, H., Yamavaki, M., Isobe, S. 1994. Two lectin from the marine sponge *halichondria okadai*. *J. Biol. Chem.* 269(2): 1375-1379.
- Kawasaki, T. and Ashwell, G. 1976. Chemical and physical properties of an hepatic membrane protein that specifically binds asialoglycoproteins. *J. Biol. Chem.* 251: 1296-1302.
- Keegstra, K., Taimadge, K.W., Bauer, W.D. and Aldersheim, P. 1973. The structure of plant cell wall a model of the walls of suspension macromolecular components. *Plant Physiol.* 51: 188-197.
- Kitao, T. and Hattori, K. 1977. Concanavalin A as a carrier of daunomycin. *Nature.* 265: 81-82.
- Kilpatrick, D.C. 1980. Purification and some properties of lectin from the fruit juice of the tomato (*Lycopersicon esculentum*) *Biochem. J.* 185: 269-272.

- Kilpatrick, D.C. and Yeoman, M.M. 1978. Purification of the lectin from the fruit juice of the tomato (*Lycopersicon esculentum*) *Biochem.J.* 185: 1151-1153.
- Kochibe, N. and Furukawa, K. 1980. Purification and properties of a novel fucose-specific hemagglutinin of *Aleuria aurantia*. *Biochem.* 19: 2841-2846.
- Kocourek, J. and Horejsi, V. 1981. Defining a lectin. *Nature.* 290: 188.
- Korberg, J., Michaelsen, T.E. and Sletten, K. 1983. Properties of the lectin purified from the seed of *Cicer arietinum* Z. *Physiol. Chem.* 364: 655-664.
- Kolb-Bachofen, V. 1991. A membrane-bound form of the acute-phase protein C-reactive protein is the galactose-specific particle receptor on rat liver macrophages. *Pathobiology.* 54:631-664.
- Konozy, E.H.E., Bernardes, E.S., Rosa, C., Faca, V., Green, L.J. and Ward, R.J. 2003 Isolation, purification, and physicochemical characterization of a D-galactosebinding leaf lectin from *Erythrina speciosa* *Arch. Biochem. Biophys.* 410: 222-229.
- Konozy, E.H.E., Mulay, R., Faca, V., Ward, R.J., Green, L.J., Rpque-Barriera, M.C., Sabbarwal, S. and Bhide, S.V. 2002 Purification, some properties of a D-galactosebinding leaf lectin from *Erythrina indica*. *Biochimie.* 43:1035-1043.
- Kornfeld, S. 1992. Structure and function of the mannose 6-phosphate/insulin like growth factor II receptors. *Ann Rev Biochem.* 61: 307-330.
- Kossowska, B., Lamer-Zarawska, E., Olczak, M. and Prastowska, I. 1999. Lectin from *Beauveria bassiana* mycelium recognizes Thomsen Friedenreich antigen and related structures. *Comp. Biochem. Physiol.* 123: 23-31.
- Lasky, L.A. 1992. Selectin:interpreters of cell-specific carbohydrate information during infamation. *Science.* 258:964-969.
- Laemmli, U.K. 1970. Cleavage of structural proteins during the assembly of the head of bacteriophage T4. *Nature.* 227: 680-685.
- Liener, I.E., Sharon,N., Goldstein, I.J.1986. *The Lectin:* Properties, function and applications in biology and medicine. *Academic Press.* 283, 371-435.

- Lin, J.Y., Shau, Y.S. and Tung, T.G. 1971. Studies on the active principle from *Abrus precatorius* L. Leguminosae seed kernels. *Toxicon*. 9:97-101.
- Linthorst, H.J.M. 1991. Pathogenesis-related protein of plant. *Crit Rev. Plant Sci.* 102: 123-150.
- Lis, H. and Sharon, N. 1977. Lectin: their chemistry and application to immunology. In *The Antigens*. (Sela, M., ed.), pp. 429-529, Academic Press Inc., New York.
- Lis, H. and Sharon, N. 1990. Legume lectins-a large family of homologous proteins. *FASEB J.* 4: 3198-3208.
- Lotan, R., Siegelman, H.W., Lis, H. and Sharon, N. 1974. Subunit structure of soybean agglutinin. *J. Biol. Chem.* 249: 1219-1224.
- Lotan, R., Cacan, R., Cacan, M., Debray, H., Carter, W.G. and Sharon, N. 1975c. On the presence of two types of subunit in soybean agglutinin. *FEBS Lett.* 57: 100-103.
- Machuka, S.J., Okeola, O.G., Van Damme, E.J.M., Chrispeels, M.J., Leuven, F.V. and Peumans, W.J. 1999. Isolation and partial characterization of galactose-specific lectins from African yam beans, *Sphenostyles stenocarpa* Harms. *Phytochem.* 51: 721-728.
- Maheswari, R., Mullainaghan, P. and Arumugam, M. 1997. Characterization of a natural hemagglutinin with affinity for acetylated aminosugars in the serum of marine prawn, *Penaeus indicus* (H.Milnc Edwards). *Fish Shellfish Immunol.* 7: 17-28.
- Maynard, Y. and Beanziger, J.U. 1982. A characterization of a mannose and N-acetylglucosamine-specific lectin present in the rat hepatocyte. *J. Biol. Chem.* 257:3788-3794.
- Miller, L.R., Collawn, J.F. and Fish, W.W. 1982. Purification and macromolecular properties of a sialic acid-specific lectin from the slug *Limax flavus*. *J. Biol. Chem.* 257:7574-7580.
- Mirelman, D., Galun, E., Sharon, N. and Lotan, R. 1975. Inhibition of fungal growth by wheat germ agglutinin. *Nature*. 256: 414-416.

- Meimeth, T., Vane, J.L., Trinn, T.H. and Clarke, A.E. 1982. Distribution of lectins in tissues, derived callus and roots of *Psophocarpus tetragonolobus* (winged bean). *Plant Physiol.* 70:579–584.
- Mishkind, M.L., Palevitz, B.A. and Raikhel, N.V. 1983. Localization of wheat germ agglutinin-like lectins in various species of the Gramineae. *Science.* 220: 1290-1299.
- Mizuno, Y., Kozutsumi, Kawasaki, T. and Yamashina, I. 1981 Isolation and characterization of a mannan-binding protein from rat liver. *J .Biol. Chem.* 256:4247-4252.
- Muramoto, K. and Kamiya, H. 1990. The amino-acid sequence of multiple lectins of the acorn barnacle *Megabalanus rosa* and its homology with animal lectins. *Biochim. Biophys. Acta.* 1039: 42-51.
- Murdock, L.L., Huesing, J.E., Nielsen, S.S., Pratt, R.C. and Shade, R.E. 1990. Biological effects of plant lectins on the cowpea weevil. *Phytochem.* 29: 85-89.
- Nguyen, N.Y., Suzuki, A., Boykins, K.A. and Liu, T.Y. 1986a. The amino acid sequence of Limulus C-reactive protein. Evidence of polymorphism. *J. Biol. Chem.* 261: 10456-10465.
- Nguyen, N.Y., Suzuki, A., Cheng, S.M., Zon, G. and Liu, T.Y. 1986b. Isolation and characterization of Limulus C-reactive protein gene. *J. Biol. Chem.* 261: 10450-10455.
- Oda, Y., Kinoshita, M., Nakayama, K., Ikeda, S. and Kakehi, K. 1999. Flow injection analysis of binding reaction between fluorescent lectin and cell. *Anal. Biochem.* 269:230-235.
- Owens, R.J. and Northcote, D.H. 1980. Purification of potato lectin by affinity chromatography on a fetuin-sepharose matrix. *Phytochemistry.*19: 1861-1862.
- Owens, R.J. and Northcote, D.H. 1981. The location of arabinosyl: hydroxyproline transferase in the membrane system of potato tissue culture cells. *Biochem. J.* 195: 661-667.

- Partridge, J., Shannon, L. and Gumpf, D. 1976. A barley lectin that binds free amino sugars. Purification and characterization. *Biochem. Biophys. Acta.* 451: 470-483.
- Pasitkul, P. 2001. Purification and characterization of Hevea latex lectin and its binding protein from latex of *Hevea brasiliensis*. Doctor of Philosophy Thesis (Biochemistry) Prince of Songkla University, Hat-Yai, Thailand.
- Peumans, W.J., Stinissen, H.M. and Carlier, A.R. 1982. Isolation and partial characterization of wheat-germ-agglutinin-like lectin from rye (*Secale cereale*) and barley (*Hordeum vulgare*) embryos. *The biochemical Society.* 203: 239-243.
- Pfeifer, K., Haasemann, M., Gamulin, V., Bretting, H., Fahrenholz, F. And Muller, W.E. 1993. S-type lectin occurs also in invertebrates: high conservation of the carbohydrate recognition domain in the lectin gene from the marine sponge, *Geodia cydonium*. *Glycobiology.* 3:179-184.
- Poola, I. and Seshadri, H.S. 1986. Rice lectin: Physico-chemical and carbohydrate-binding properties. *Carbohydrate Res.* 146: 205-217.
- Pueppke, S.G. 1979. Distribution of lectins in the jumbo virginia and spanish varieties of the peanut, *Arachis hypoaea*. *Plant physiol.* 64: 575-580.
- Pueppke, S.G., Bauer, W.D., Keegstra, K., Ferguson, A.L. 1978. Role of lectins in plant-microorganism interactions. II Distribution of soybean lectin in tissues of *Glycine max* (L.) Merr. *Plant Physiol.* 61: 779-784.
- Pusztai, A. 1991. *Plant lectins*, New York : Cambridge University Press, New York.
- Ratanapo, S. and Chulavatnatol, M. 1990. Monodin, a new sialic acid specific lectin from black tiger prawn (*Penaeus monodon*). *Comp. Biochem. Physiol.* 97: 515-520.
- Ratanapo, S. and Chulavatnatol, M. 1992. Monodin-induce agglutination of *V. vulnificus*, a major infective bacterium in black tiger prawn (*Penaeus monodon*). *Comp. Biochem. Physiol.* 102: 855-859.

- Richards, E.H., Ratcliffe, N.A. and Renwarntz, L. 1988. Isolation and characterization of a serum lectin from the giant tick insect *Extatosoma tiaratum*. *Insect Biochem.* 18(7):169-700.
- Rouge, P. and Charbert, P. 1983. Purification and properties of a lectin from *Lathyrus tingitanus* seeds. *FEBS Lett.* 157:257-260.
- Rudiger, H. 1984. On the physiological role of plant lectin. *Bioscience*. 34: 95-99.
- Rukseree, K. 1998. Lectin binding protein on rubber particles and latex vessel plugging. Master thesis (Biochemistry) Mahidol University Thailand
- Ryan, C.A. 1990. Protease inhibitors in plants: gene for improving defenses against insects pathogens. *Annu Rev Phytopathol.* 28:426-449
- Sabnis, D.D., Hart, J.W. 1978. The isolation and some properties of a lectin (hemagglutinin) from *Cucurbita* phloem exudate. *Planta*. 142, 97–101.
- Sampietro, A.R. and Vattuone, M.A. 1994. Purification and characterization of a *Sarrothamnus welwitschii* seed lectin. *Phytochem.* 35: 841-845.
- Shangary, S., Singh, J., Kamboj, S.S., Kamboj, K.K. and Sandhu, R.S. 1995. purification and properties of four monocot lectin from the family Aaceae. *Phytochem.* 40: 449-455.
- Shankar, C.S. and Umesh-Kumar, S. 1994. A surface lectin associated with flocculation in brewing strains of *Saccharomyces cerevisiae*. *Microbiol.* 140: 1097-1101.
- Sharon, N. 1977. Lectins. *Sci. American* . 236: 108-119.
- Sharon, N. 1993. lectin-carbohydrate complexes of plants and animals: an atomic view. *Trends Biolochem Sci.* 18:221-226.
- Sharon, N. and Lis, H. 1972. Lectin: cell - agglutinating and sugar - specific proteins. *Science*. 177: 949-985.
- Sharon, N. and Lis, H. 1995. Lectins-proteins with a sweet tooth: functions in cell recognition. *Essays Biochem.* 30: 59-75.
- Southorn, W..A. and Edwin, E.E. 1968. Latex flow study II. Influence of lutoids on te stability and flow of *Hevea* latex. *J.Rubb. Inst.Malaya.* 20:201-215.

- Stahl, P.D. 1992. The mannose receptor and other macrophage lectins. *Current Opinion in Immunology*. 4: 49-52.
- Stillmark, H., 1888. Thesis University of Dorpat (Tartu). Quoted by Boyd WC (1963) The Lectin:their present status. *Vox Sang.* 8:1-32.
- Stratford, M. and Carter, A.T. 1993. Yeast flocculation: Lectin synthesis and activation. *Yeast*. 9: 371-378.
- Straver, M.H., Tras, V.M., Smit, G., Kijne, J.W. 1994. Isolation and partial purification of mannose-specific agglutinin from brewer yeast involved in flocculation. *Yeast*. 10: 1183-1193.
- Strip, F., Gasperi-Campani, A., Barbieri, L., Lorenzoni, E., Montanaro, L., Sperti, S. and Bonetti, E. 1978. Inhibition of protein synthesis by modeccin, the toxin of *Modecca diditata*. *FEBS Lett.* 85:65-67.
- Stripe, F., Liscastro, F., Morini, M.C., Perente, A., Savino, G., Abbondanza, A., Bolognesi, A.I. and Rossi, C.A. 1993. Purification and partial characterization of a mitogenetic lectin from the latex of *Euphorbia marginata*. *Biochem. Biophys. Acata*. 1158: 33-39.
- Suvachittanont, W. and Peutpaiboon, A. 1992. Lectin from *Parkia speciosa* seeds. *Phytochem.* 31: 4065-4070.
- Suzuki, I., Saito, H., Inoue, S., Migita, S., and Takahashi, T. 1979. Purification and characterization of the lectins from *Aloe Arborescens* Miller. *J. Biochem. (Tokyo)*. 85: 163-171.
- Suzuki, T. and Katsuyoshi, M., 1989. A galactose-specific lectin from the hemolymph of the pearl oyster *Pinctada fucata martensi*. *Com. Biochem. biophys.* 92:455-462.
- Suzuki, T., Takagi, T., Furukhri, T., Kawamura, K. and Nakauchi, M. 1990. A calcium-dependent galactose binding lectin from the tunicate *Polyandrocarpa misakiensis*. *J. Biol. Chem.* 265: 1274-1281.
- Takahashi, H., Komano, H., Kawaguchi, N., Kitamura, N., Nakanishi, S. and Natori, S. 1985. cloning and sequencing of cDNA of *Sarcophaga peregrine* humoral lectin induce on injury of the body wall. *J .Biol. Chem.* 260: 12228-12233.

- Takeya, H., Nishida, S., Miyata, T., Kawada, S., Saisaka, Y. and Morita, T. 1992. Coagulation factor X activating enzyme from Ressell's viper venom (RVV-X). A novel metalloprotein with disintegrin (platelet aggregation inhibitor)-like and C-type lectin-like domains. *J. Biol. Chem.* 267: 14109-14117.
- Tazaki, K. and Yoshida, K. 1992. The bark lectin of *Robinia pseudoacacia*: purification and partial characterization. *Plant Cell Physiol.* 33: 125-129.
- Tennent, G.A. and Pepys, M.B. 1994. Glycobiological of the pentraxins. *Biochemical Society Transactions*. 22: 74-79.
- Togun, R.A., Animashaun, T., Kay, J.E. and Aboderin, A.A. 1994. A galactose-binding T-cell mitogenic lectin from the seeds of *Telfairia occidentalis*. *Phytochem.* 35: 1125-1130.
- Tong-in, D. 2001. Rubber particles agglutinin in Iaex. Master thesis (Biochemistry) Mahidol University, Thailand.
- Trowbridge, L.S. 1974. Isolation and chemical characterization of amitogenic lectin from *Pisum sativum*. *J. Biol. Chem.* 249: 6004-6012.
- Tsuboi, I., Yanagi, K., Matsukawa, M. 1996. Isolation of novel lectin from the hemolymph of Horseshoe Crabs *Limulus polyphemus* and its hemagglutinating properties. 1996. 113: 137-142.
- Usami, Y., Fujimura, Y., Zusuki, M., Ozeki, Y., Nishio, K., Fukui, H. and Titani, K. 1993. Primary structure of two-chain botrocetin, a von Willebrand factor modulator purified from the venom of *Bothrops jararaca*. *Proceedings of the National Academy of Science, USA*. 90: 928-932.
- Utarabhand, P. and Akkayanont, P. 1995. Purification of lectin from *Parkia javanica* bean. *Phytochem.* 38: 281-285.
- Van Damme, E.J.M., Smeet, K., Leuven, F.V. and Peumans, A.J. 1991. Acomparative study of mannose-binding lectin from the *Amaryllidaceae* and *Alliaceae*. *Phytochem.* 30:509-514.
- Van Driessche,E. 1988. Structure and function of leguminosiae lectins. In advances in Lectin Research. (Franz, H. ed) Vol. 1,pp. 73-134. Berlin: VEB Verlag.

- VSAta, G.R., Ahmed, H., Fink, N.E., Elola, M.T., Marsh, A.G., Snowden, A. and ODOM, E.W. 1994. Animal lectins as self/non-self recognition molecule. Biochemical and genetic approaches to understanding their biological role and evolution. *Annals of the New York Academy of Science*. 172: 55-73.
- Veau, B., Guillot, J., Damez, M., Dusser, M., Konska, G. and Botton, B. 1999. Purification and characterization of an anti-(A+B) specific lectin from the mushroom *Hygrophorus hypothejus*. *Biochem. Biophys. Acta*. 1428: 39-44.
- Wititsuwannakul, R., Wititsuwannakul, D., Sakulboriruk, C. 1998. A lectin from the bark of the rubber tree (*Hevea brasiliensis*). *Phytochem.* 47 (2): 183-187.
- Wong, J.H. and NG, T.B. 2002. Purification of a trypsin-stable lectin with antiproliferative and HIV-1 reverse transcriptase inhibitory activity. *Biochem. Biophys. Res. Com.* 301: 545-550.
- Yoshida, K., Baba, K., Yamamoto, N. and Tazaki, K. 1994. Cloning of a lectin cDNA and seasonal changes in levels of the lectin and its mRNA in the bark of *Robinia pseudoacacia*. *Plant mol. Biol.* 25: 845-853.
- Zacharius, R.M., Zell, T.E., Morrison, J.H. and Woodlock, J.J. 1969. Glycoprotein staining following electrophoresis on acrylamide gels. *Annal Biochem.* 30: 148-152.