



รายงานวิจัยฉบับสมบูรณ์

เรื่อง

การทำบริสุทธิ์, ศึกษาคุณสมบัติของเลคตินจากลุตอยด์
และ โปรตีนที่เกาะจับกับเลคตินในน้ำยางพารา

**Purification and Characterization of Lutoidic Lectin and
Its Binding Protein from Latex of *Hevea brasiliensis***

โดย

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PSU

เลขหมู่ QK896.L42 R36 1998
Bib Key..... 238478
..... 5 ส.ค. 2547/.....

(สนับสนุนโดยทุนอุดหนุนการวิจัยจากงบประมาณแผ่นดินปี 2539-2541)

Manuscript I

**A LECTIN FROM THE LATEX OF
HEVEA BRASILIENSIS: PURIFICATION
AND CHARACTERIZATION**

A lectin from the latex of *Hevea brasiliensis*: purification and characterization

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Key word Index: *Hevea brasiliensis*; Euphorbiaceae; rubber latex; lectin; membrane

* Part 1 in the series " Proteins Involved in Coagulation of Natural Rubber Latex ".

Abstract:

A protein extracted from an acetone precipitated fraction, prepared from the bottom or luteoid body-riched fraction of centrifuged fresh latex, in a buffer containing 0.2% Triton X-100. It was able to agglutinate erythrocytes from either rabbit or mouse but not human. The *Hevea* latex lectin (HLL) was purified to homogeneity by chitin batch-binding and DEAE-Sepharose column. Its M_r upon SDS-PAGE is 17 kD with native M_r obtained by gel filtration of 276 kD. It has a pI value of 5.1 and pH stability ranging from 6-10. It is heat stable up to 60°C and activated by low Ca^{2+} concentration. The hemagglutination of HLL was inhibited by several glycoproteins such as fetuin, asialofetuin, ovomucoid, mucin, asialomucin, type II-S trypsin inhibitor but not α_1 -acid glycoprotein, soybean trypsin inhibitor and mono-, di- or tri-saccharides.

Manuscript II

HEVEA LATEX LECTIN BINDING PROTEIN FROM THE LATEX SMALL RUBBER PARTICLES: PURIFICATION AND CHARACTERIZATION

***Hevea* latex lectin binding protein from the latex small rubber particles: purification and characterization.**

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Key Word Index : *Hevea brasiliensis*; Euphorbiaceae; rubber particle; lectin

* Part 2 in the series " Proteins Involved in Coagulation of Natural Rubber Latex ". For Part 1 see ref. [#1 in this series].

Abstract:

A protein extracted from small rubber particles (SRP) obtained from the rubber layer of ultracentrifuged fresh latex in the presence of 0.2% Triton X-100 was able to bind *Hevea* latex lectin (HLL). The activity was measured from its ability to inhibit hemagglutination induced by HLL. The SRP-HLL binding protein (SRP-HLLBP) was purified from the extract by subjected to acetone precipitation, heat-treatment and gel filtration. Purified SRP-HLLBP possessed M_r of 120 and 24 kD upon native PAGE and SDS-PAGE, respectively. The pI value was determined to be 5.4 while pH optimum ranging from 5-8. It is heat stable upto 60°. A decrease in hemagglutination inhibition (H.I.) was observed with chitinase-treated SRP-HLLBP. The specific H.I. titer observed with SRP-HLLBP was much lower than several other glycoproteins from non-latex origin.