Thesis Title	Study of Enzyme Peroxidase in *Hevea* (Natural Rubber) Bark Tissues
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ABSTRACT

A high active soluble peroxidase has been purified from *Hevea bark (Hevea brasiliensis)* by using 2-phase separation, Sephadex G-100 column and DEAE-cellulose column. At the final step, 185-fold purification and 16% yield of the enzyme was achieved. *Hevea* bark peroxidase is a glycoprotein with a molecular weight of 45,000 as determined by Sephadex G-100 column and SDS-PAGE.

Hevea bark peroxidase contains heme group as a prosthetic group. Therefore, it was inhibited by typical hemoprotein inhibitors KCN and NaN_3. It was also inhibited by high concentration of H_2O_2.

K_m values of *Hevea* bark peroxidase were 0.58×10^{-3} M for 2, 2-Azino-bis -(3-ethylbenzthiazoline-6-sulfonic acid) (ABTS), 0.86×10^{-3} M for 4-Aminoantipyrine (4-AA), 1.67×10^{-3} M for 3, 3- Diaminobenzidine (DAB), 3.68×10^{-3} M for o-

phynalenediamine (OPD). K_m values for H_2O_2 of the enzyme were 0.15 x 10^{-3} M for ABTS, 0.25 x 10^{-3} M for OPD.

The enzyme was relatively stable at the temperature ≤ 60°C and in the range of pH 5.5 to pH 8.0. The optimal temperature of the enzyme was in the range of 25°C to 45°C and the optimum pH of the enzyme was in the range of pH 5 to pH 7.