GLUCOSE OXIDASE MEMBRANE

FOR

YSI GLUCOSE ANALYZER

BY

PIANGJAI SAIYEN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

(CLINICAL PATHOLOGY)

IN THE

FACULTY OF GRADUATE STUDIES

OF

MAHIDOL UNIVERSITY

1983

Thesis Title	Glucose Oxidase Membrane for YSI Glucose Analyzer
Author	Piangjai Saiyen
Degree	Master of Science (Clinical Pathology)
Major Advisor	Dr. Phichai Thuvasethakul
Department	Pathology
Faculty	Faculty of Medicine, Ramathibodi Hospital
Date of Graduation	December 1, 1983

Abstract

The method for determination of glucose by glucose oxidase membranes was presented. The preparation of the membrane was based on an immobilization of glucose oxidase on the membrane by a crosslink method. The preparation of the membrane was easy and took only 12 hours to complete the work. The prepared membrane was very good and suitable to be used with the Yellow Spring Glucose Analyzer Model 23A. Within-run and day to day-run precisions of the present method were excellent. Recovery of the method was closed to 100 percent. Values of glucose concentrations obtained by the prepared membrane compared well ($r = 0.9986$) with those obtained by the Yellow Springs glucose membranes. The stability of the prepared membranes was at least 7 months and could be used for at least 300 assays. The only one reagent, the phosphate buffer pH 7.3, could be reused for 5 times. By this method, the cost of the glucose assay could be reduced about 30-folds compared with those of Yellow Springs.