Foreword

This issue contains papers from working parties and poster sessions, as well as separate communications presented at the Vth International Congress on Thrombosis and Haemostasis in Philadelphia in June 1977. These papers deal with synthetic inhibitors to blood coagulation and fibrinolytic systems and synthetic peptide substrates for diagnostic use in these fields.

The possibility of synthesizing different inhibitors to serine proteases, and their application in studies of blood coagulation and fibrinolytic systems in vitro and in vivo, have fascinated research workers for many years. With the advent of synthetic peptide substrates, great interest has now also been centered on the assay of factors involved in blood coagulation and fibrinolytic processes and their inhibitors. With the synthetic tri- and tetrapeptide substrates now available, many good and convenient methods for the assay of changes in blood coagulation and fibrinolytic parameters, including inhibitors, have been elaborated. Some of those have already proved useful in the clinic.

One has, however, to remember that the substrates are not completely specific. Thus, when we want to measure an enzyme very specifically, we have to use either highly specific activators or specific inhibitors such as hirudin, soybean trypsin inhibitor, natural inhibitors (antithrombin III), specific antisera, synthetic inhibitors. In this connection we must also hold in mind that to measure enzymatic activity by using synthetic substrates may not be the same as measuring its activity in clotting systems as was shown for the standardization of thrombin.

In most of the substrates, optical impurities are present. Thus, in each batch of substrate, the amount of hydrolyzable substance must be estimated in order to know the true values for the K_m and K_{kat} . The K_m and K_{kat} ought to be determined using chemically well-defined enzymes. The conditions of assay, pH etc. must also be well-documented. All these parameters ought to be declared by the manufacturer.

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