HIGH MOLECULAR WEIGHT KININOGEN: ITS ROLE IN ACTIVATION OF HAGEMAN FACTOR

E. MARION, WEBSTER, A. JORGE GUIMARAES and JACK V. PIERCE

Section on Physiological Chemistry, Hypertension-endocrine Branch, National Heart and Lung Institute, Bethesda, Maryland, U.S.A.

Inactive Hageman factor (HFi) is thought to be activated by adsorption to a negative surface which produces an active enzyme. However, our earlier data (M.E. Webster and J.V. Pierce, Fed. Proc. 32:845 Abs., 1973) had indicated that activator(s) present in Hageman factor deficient plasma were required for the formation of active Hageman factor (HFa). Prekallikrein, plasminogen and plasmin do not activate HFi. Kallikrein, on the other hand, forms HFa from crude HFi, but not from highly purified HFi prepared by Cochrane and Wuepper (J. Exp. Med. 134:986, 1971). Recently, multiple forms of kininogens have been isolated from human plasma in 60% yelds by a procedure involving affinity chromatography with immobilized mono-specific antibody (Guimaraes et al., Fed. Proc. 33:641, Abs., 1974). The high molecular weight kininogens (HMWKgn) isolated by this procedure do not form HFa from HFi at concentrations similar to those found in plasma. However, HMWKgn at concentrations higher than those found in plasma or when mixed with prekallikrein at normal levels can form HFa from crude HFi. These data suggest that, in plasma, the normal rate of activation of HFi requires that all three substances (prekallikrein, HMWKgn and HFi) be adsorbed to a negative surface such as collagen.

BRADYKININ AND OTHER POLIPEPTIDES INTERACTION WITH RECEPTORS OF THE GUINEA-PIG ILEUM

J. WEINBERG, O.L. LACOMBE, C.R. DINIZ and M. MARES GUIA

Department of Biochemistry, Faculty of Medicine, University of Sao Paulo, Ribeirao Preto, Sao Paulo, Brazil

Longitudinal muscle strips from guinea-pig ileum (LMS) prepared according to the method of Rang (1) were used to determine drug-receptor dissociation constant for bradykinin, aniogiotensin and acetylcholine. Contractions were recorded on a smoked drum with an auxotonic lever (2). After each experiment