Isolation of glomeruli was done by microdissection. Tubuli were isolated after "dissociative" treatment with collagenase, according to Guder. (Hoppe-Seyler's 2. Physiol.Chemie 352,1319 1971). We observed a linear dose dependency of enzyme in microdissected glomeruli and in isolated tubuli. Enzyme activity of 80 glomeruli was the lowest measurable. 90% in inhibition of Kinin formation was observed by the use of Trasylol. Carboxypeptidase B completey destroyed the uterus contracting material.
There was no effect on rat blood pressure even after application of an incubation mixture with high doses of urine glomeruli and tubuli. Renin and Angiotensin II was not detectable.
There were several hints of a tubular localisation of renal Kininogenase. Now it is evident, that renal Kininogenase is located in glomeruli as well as in tubuli.

(This Research was Supported by Sonderforschungsbereich 51 München)

CONFORMATIONS OF BRADYKININ IN RELATION TO SOLVENT ENVIRONMNET

D.I. MARLBOROUGH, J.W. RYAN and A.M. FELIX

Papanicolaou Cancer Research Institute P.O. Box 23-6188, Miami, Fla., 33123, U.S.A. Hoffmann-La Roche Inc. Nutley, New Jersey, U.S.A.

Bradykinin has different spectroscopic properties in polar compared to non-polar environments. These spectroscopic differences are assumed to reflect a reorientation of the amide dipoles with respect to each other and with respect to the solvent environment. This assumption is based on analogy with spectroscopic changes known to occur in model polypeptides such as poly-γ-benzyl-L-glutamate in solvents of differing polarity. Strong evidence has been accumulated from biophysical studies which indicates that the conformations of cyclic depsipeptides differ in polar and non-polar environments and also when complexed with a cation. These transitions have been related to the ion-transport properties of the depsipeptides indicating conformational changes of the depsipeptides upon association with the hydrophobic environment in a membrane. Similarly, the apparent conformation changes of bradykinin associated with the change from polar to non-polar solvents may reflect possible changes involved in its pharmacological effects. In addition we have found that sodium dodecyl sulfate (SDS) induces changes in the circular dichroism (CD) spectrum of bradykinin equivalent to those found in non-polar solvents. SDS in association with proteins has been suggested by Reynolds and Tanford (J. Biol. Chem., 1970, 245, 5161) to provide a model system for studies of the conformational properties of membrane-associated proteins. Analogs of bradykinin where small modification have been carried out on the proline residue in the third position from the α-amino terminal demonstrate different aqueous CD spectra from the parent

bradykinin although the pharmacological activities are quite similar. In non-polar solvents, however, the CD spectra for these analogs are similar to bradykinin in nonpolar solvents. This reinforces the suggestion that the conformation in non-polar environments is likely to be the important one in relation to pharmacological activity. The changes which occur in the CD spectra of bradykinin and its analogs on going from aqueous to non-polar solvents are similar to the change in the CD spectra for the poly-L-proline I to poly-L-proline II transition. This latter transition involves a change of configuration from cis-to trans- around the prolyl peptide bonds, hence it is argued in the case of bradykinin that the change of interaction on going from polar to non-polar environments is a result of a cis- to a transorientation around the prolyl^2-prolyl^3 peptide bond.

PERMEABILITY FACTOR AND SURFACE ESTERASE

BRENDA MASON

Lister Institute of Preventive Medicine, London, England.

It was reported (Mason, 1974) that, in human plasma, active permeability factor (PFdil) was separable from surface factor (SF) by adsorption at 20°C with quantities of glass ballotini; and that a preparation of prePFdil was separable from SF by adsorption at 3°C.

This technique was applied to guinea-pig plasma with similar results. The cold-adsorbed plasma dilution was activable by coated ballotini prepared from human or guinea-pig plasma. However, prolonged preincubation in diisopropylphosphofluoridate (DFP) of the glass-borne SF, followed by copious washing, inhibited the subsequent ability of the SF to generate active PFdil in both cold-adsorbed plasma and dilute Hageman-trait plasma. This inhibition was blocked by adding tosyl arginine methyl ester with the DFP, indicating that the generation of PFdil is dependent upon the presence of an active esterase that is adsorbed to glass.

REFERENCE

Mason, B. (1974) Int. Conf. Chem. Biol. Kallikrein-Kinin System in Health and Disease, Reston, Virginia.