Introduction

The application of chemical and biochemical techniques to the study of the kidney has a tradition that goes back far into the 19th century [for literature see 1]. Many biochemical results obtained with renal tissue and reported in the literature, however, were not considered by renal physiologists, since these results could not be correlated with renal transport functions. Thus, the finding of Hans Krebs, in 1935, that the kidney can form and degrade glutamine, has been incorporated into handbook knowledge only when van Slyke discovered that glutamine was the main precursor of urinary ammonia [2]. Likewise, many other findings like renal gluconeogenesis, renal lipid synthesis, inositol polyphosphate turnover and renal glycogen deposition had been described many years before they could be attributed to defined nephron segments and functions.

It was in 1971, when 30 European colleagues first met to specifically discuss the biochemical aspects of kidney function [3]. Since that time a biannual international symposium was organized by one of the colleagues engaged in this field. With the broadening of our knowledge on the effects of biochemical processes along the nephron, renal biochemistry has been of increasing impact for renal physiology. New techniques applied to defined nephron cells have greatly increased our knowledge on the metabolic organization of the nephron [4]. Transport ATPases, hormone receptors, transport channels, enzymes and structural components are now studied at the molecular level applying radiochemical, immunological and molecular biology techniques.

The present volume contains selected original papers from the 1st Joint Meeting of the American Society of Renal Biochemistry and Metabolism with the 9th International Symposium ‘Biochemical Aspects of Kidney Function’, held in Salamanca, Spain, in June, 1989 (host: Dr. Juan F. Macias, Salamanca). Abstracts of all contributions are published in Mineral and Electrolyte Metabolism, Vol. 15, No. 6 (pp. 365-382), 1989. As in previous meetings, reports on the mapping of biochemical functions in microdissected nephron segments provided new insights into the biochemical organization of the nephron. Likewise histochemical techniques have linked the molecular view to the single cell level. As can be seen from reports of this volume, cell culture models as well as subcellular vesicle and/or organelle studies allow insights which are not accessible in studies of the whole organ and even the isolated nephron segment.

With the increasing linkage of renal biochemistry to physiology, the organizers thankfully accepted the offer to publish original papers from this meeting in Renal Physiology and Biochemistry. It is hoped that the papers summarized in this and the following issue will be a contribution to new insights into renal function in health and disease.

Munich, Rochester 1989
Walter G. Guder (Guest Editor)
References


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