

## **Larry Robert Stepp**

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### **Research**

Research interest focus on the following areas: 1) Structure, function and regulation of Na<sup>+</sup>, K<sup>+</sup>-ATPase, and 2) Role of folic acid in preventing formation of plaques and tangles associated with Alzheimer's disease.

### **New York College of Osteopathic Medicine.**

Studies on the structure and regulation of Na<sup>+</sup>, K<sup>+</sup>-ATPase activity.

**Clayton Foundation Biochemical Institute, University of Texas at Austin** (1980-1987). Positions: Research Scientist (1983-1986); Research Associate (1980-1983 and 1987).

- Aided in development of methods to scale-up protein purification procedures (1987).
- Assisted with laboratory course on biochemical techniques (Chemistry 369L, University of Texas at Austin, spring 1988).
- Examined structure, function and regulation of pyruvate and  $\alpha$ -ketoglutarate dehydrogenase multienzyme complexes (1980-1986).

### **Vanderbilt University, Department of Physiology**

(graduate student and research associate (1979-1980).

- Characterized the partial reactions of the sodium forms of Na<sup>+</sup>, K<sup>+</sup>-ATPase at high levels of NaCl to isolate selected intermediates (1975-1980).
- Assisted with physiology course labs on nerve impulse, etc.

### **Air Force**

Presented lectures and demonstration on anatomy, physiology and emergency medical care.

- Educational training included general classroom communicative techniques, test design and counseling (1969-1973).
- Awarded USAF Commendation Medal, 1973.

## **Representative Publications and Abstracts**

Stepp, L.R. and Novakosky, M.A. (1997) "Effect of 5-hydroxytryptamine on sodium- and potassium-activated adenosine triphosphatase and its reactivity toward ouabain", *Archives of Biochemistry and Biophysics* **337**, 43-53.

Stepp, L. R. and Reed, L.J. (1985) "Active-site modification of mammalian pyruvate dehydrogenase by pyridoxal-5'-phosphate", *Biochemistry* **24**, 7187-7191.

Mullinax, T.M., Stepp, L.R., Brown, J.R., and Reed, L.J. (1985) "Synthetic peptide substrates for mammalian pyruvate dehydrogenase kinase and pyruvate dehydrogenase phosphatase", *Archives of Biochemistry and Biophysics* **243**, 665-659.

Xu, W.X., Reed, L.J., Stepp, L.R., and Hackert, M.L. (1985) "Crystallization of modified core enzyme of  $\alpha$ -ketoglutarate dehydrogenase complex from *E. coli*", *American Crystallographic Association Abstracts* **13**, 43.

Stepp, L.R., Pettit, F.H., Yeaman, S.J., and Reed, L.J. (1983) "Purification and properties of pyruvate dehydrogenase kinase from bovine kidney", *Journal of Biological Chemistry* **258** 9454-9458.

Stepp, L.R., Bleile, D.M., McRorie, D.K., Pettit, F.H., and Reed, L.J. (1981) "Use of trypsin and lipoamidase to study the role of lipoic acid moieties in the pyruvate and  $\alpha$ -ketoglutarate dehydrogenase complexes of *Escherichia coli*", *Biochemistry* **20**, 4555-4560.

Stepp, L.R. and Post, R.L. (1979) "Binding of Nucleotides to (Na,K)ATPase", *Federation Proceedings* **38** 1041.