

Vekalet Tek, PhD

Research Scientist

Protein Science and Enzymology



Education

- Ph.D. Biochemistry, Ataturk University, Erzurum/Turkey, 1993.
- M.S. Biochemistry, Ataturk University, Erzurum/Turkey, 1987.
- B.S. Chemistry, Hacettepe University, 1982.

Work Experience

- Research Scientist (2006-present), Florida International University,
- Research Associate (2004-2006), University of Nebraska, Lincoln, NE
- Research Associate (2002--2004), National Renewable Energy Laboratory, Golden, CO
- Research Associate (2000-2002), Kansas State University, Manhattan, KS
- Post-Doc. (1999-2000), The University of Kansas, Lawrence/KS
- Visiting Scientist (1998-1999), The University of Kansas, Lawrence/KS
- Assistant Professor (1994-2000), Ataturk University, Erzurum/Turkey.
- Research Assistant (1985-1994), Ataturk University, Erzurum/Turkey.
- Teaching Assistant (1986-1993), Ataturk University, Erzurum/Turkey.

Research Interests

Vekalet Tek is a Research Scientist at Florida International University/Applied Research Center, where she has been employed since 2006. Her areas of research extended from the microbial proteins (carbonmonoxide dehydrogenase and hydrogenase, ClpB) to the animal enzymes (carbonic anhydrase, protein phosphatase 2B, Hemeoxygenase 2, BVR and potassium channel) to understand the reasons of the diseases in the animal and human organs, to uncover the toxic effects of the certain pollutants and pesticides on the animal and human enzymes and to produce microbial hydrogen gas.

Dr. Tek's present research involves the genetic transfer of an O₂-tolerant hydrogenase into *E. coli* to express the active enzyme and to produce hydrogen (clean energy carrier) gas.

In her research, she uses a combination of biology, biochemical and biophysical experimental approaches to study the recombinant protein expression, interactions between proteins, protein localization inside living cells, and structural changes in proteins and protein complexes, metallo-enzymology and the stability of the anaerobic enzymes.

Recently, she has been involved in setting up a "Biological Sciences Laboratory" at FIU/ARC.

Selected Publications and Reports

Vekalet Tek and George Philippidis, Annual Report for DOE, July, 2007. published at DOE website, II.H.5 Photobiological Hydrogen Research.

- 1-Agbas, A.B., Hui, D., Wang, X., **Tek,V.**, Zaidi, A. and Michaelis, E.K. Activation of Brain Calcineurin(Cn) by Cu-Zn Superoxide Dismutase (SOD1) depends on direct SOD1-Cn protein interactions occurring in-vitro and in-vivo. *Biochem. J.* (2007) Immediate Publication, DOI : 10.104/BJ0061202.
- 2-Maness, P.C., Huang, J., Smolinski, S., **Tek, V.**, and Vanzin, G. Energy generation from the CO oxidation: hydrogen Production Pathway in *Rubrivivax gelatinosus*. *Applied and Environmental Microbiology*, June 2005, 71:2870-2874.
- 3-**Tek,V.**, Zolkiewski, M., Stability and interactions of the amino-terminal domain of ClpB from *Escherichia coli* . *Protein Science* (2002), 11:1192-1198.
- 4-Liu, Z.,**Tek, V.**, Akoev , V., Zolkiewski, M., Conserved Amino Acid Residues within the Amino-terminal Domain of ClpB are Essential for the Chaperone Activity J. Mol. Biol., August 2, 2002, 321(1): 111-120
- 5-**Tek,V.**, Keha,E.E., Kufrevioglu,O.I., The Effects of the Housing Atmosphere on Haemoglobine, 2-3 Diphosphoglycerate and Carbonic Anhydrase Activity Levels of the Sheep Erythrocytes, *DOGA,Turkish J.Eng. and Environ.* 13, 1:77-82, 1989. Ankara-Turkey.