

FLAUBERT MBEUNKUI

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EDUCATION

Ph.D., Biochemistry, University of Stuttgart, Stuttgart, Germany, 2003.

MS, Biochemistry, University of Yaounde I, Yaounde, Cameroon, 1995.

BS, Biochemistry, University of Yaounde I, Yaounde, Cameroon, 1992.

DISSERTATION/Ph.D. THESIS

Title: The effects of low nitrate levels on the freshwater cyanobacterium *Synechocystis* sp. strain PCC 6803: Construction of a bioreporter assay and molecular characterization by transcriptome and proteome analysis.

Cognate Area: Gene cloning, proteomics and transcriptomics.

Dissertation Advisor: Rolf D. Schmid, Ph.D.

AWARD

Scholarship from the German Academic Exchange Service (DAAD), 1999-2003.

TEACHING EXPERIENCE

Teaching Associate, University of Stuttgart, Germany, 2000-2003.

Assisted students individually in practical courses.

Advisor: Rolf D. Schmid, Ph.D.

Teaching Associate, University of Yaounde I, Cameroon, 1995-1999

Supervised and instructed students in biochemistry and laboratory techniques. Prepared teaching materials including problem sets and exams.

Advisor: Zheng Ping, Ph.D.

RESEARCH EXPERIENCE

Postdoctoral Research Fellow, Cancer Research Institute, Univ. of South Alabama, Mobile, January 2004-March 2006

Methodology development of plasma membrane and secreted protein purification and analysis. Identification and characterization of potential metastatic biomarkers. Different cancer cell lines were investigated and the method involved protein sample preparation and digestion with trypsin, Liquid chromatography-Mass spectrometry analysis of peptides and MASCOT search

engine for protein identification. The mass spectrometry data were validated by targeting biomarkers on SDS-PAGE gel with specific antibodies (western blotting).

Advisor: Lewis K. Pannell, Ph.D.

Research Associate, Institute of Technical Biochemistry, Univ. of Stuttgart, Stuttgart, 2000-2003.

The study of the freshwater cyanobacterium *Synechocystis* sp. strain PCC 6803 was divided into three parts:

- 1- The construction of a luminescent reporter strain, which involved gene cloning, immobilization of the biosensor in microtiter plates and quantification of the bioluminescence emission.
- 2- Proteomics, which involved two-dimensional gel electrophoresis using immobilized pH gradient gel, HPLC, MALDI-TOF/MS and western blotting.
- 3- Transcriptomics, which involved mRNA purification, reverse transcription of mRNA to cDNA and labeling (Cy3, Cy5), and hybridization on a laboratory-made oligonucleotides microarray.

Advisor: Rolf D. Schmid, Ph.D.

PRESENTATIONS

Mbeunkui, F., Pannell, L. K. & Fodstad O. Secretory proteomes from cancer cells: An Optimized approach using MS-based proteomics. 97th AACR annual meeting. April 1-5, 2006 in Washington, DC (Poster).

Mbeunkui, F., Fodstad, O., & Pannell, L. K. The secretory proteome of an aggressive melanoma cell line. 53rd ASMS Conference on Mass spectrometry in San Antonio, Texas. June 5-9, 2005 (Poster MP30 #510).

Mbeunkui, F., Schmid R.D. & Bachmann, T.T. Gene expression and proteome analysis in a freshwater cyanobacterium during nitrate starvation. 4th FASBMB conference in Yaoundé, Cameroon. November 25-28, 2003 (Oral presentation).

Mbeunkui, F., Schreiter, P., Gillor, O., Richaud, C., Belkin, S., Etienne, A.L., Schmid R.D. & Bachmann, T.T. Monitoring of nutrient bioavailability using recombinant cyanobacterial reporter strains. BioSensor Symposium in Tübingen, Germany. April 1-3, 2001 (Poster).

PUBLICATIONS

Mbeunkui; F., Fodstad, O., & Pannell, L. K. Secretory proteins enrichment and analysis: An optimized approach applied on cancer cell lines using 2D LC-MS/MS. *J. proteome Res.* **5**(4) 899-906 (2006).

Mbeunkui, F. The effects of low nitrate levels on the freshwater cyanobacterium *Synechocystis* sp strain PCC 6803: Construction of a bioreporter assay and molecular characterization by transcriptome and proteome analysis. Dissertation, University library, University of Stuttgart, Stuttgart, Germany. 128 p (2003).

Mbeunkui, F., Richaud, C., Etienne, A.L., Schmid R.D. & Bachmann, T.T. Bioavailable nitrate detection in water by an immobilized luminescent cyanobacterial reporter strain. *Appl Microbiol Biotechnol.* **60**: 306-312 (2002).

RESEARCH IN PREPARATION

Mbeunkui; F., Samant, L., Samant, R., Fodstad, O. & Pannell, L. K. Identification of secreted biomarkers in the series of breast cancer cell line MCF10 using LC-MS/MS (*in preparation*).

LANGUAGE SKILLS

Fluent in speaking, writing and reading **English** and **French**.

Fluent in writing and reading **German**.

PERSONAL PROFILE

Date of Birth: August 7th, 1968

Marital status: Married

PROFESSIONAL AFFILIATION

American Society of Mass Spectrometry (ASMS).

REFERENCES

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