

Curriculum Vitae of  
**M. Mohiuddin Kabir**

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**EDUCATION**

- ✪ *Kyushu Institute of Technology*, Fukuoka, Japan (Feb. 2000 – Mar. 2003)  
*Degree:* Ph.D. in Biochemical Engineering  
*Supervisor:* Professor Kazuyuki Shimizu  
*Dissertation:* Metabolic pathway analysis of recombinant *Escherichia coli* based on gene and protein expressions
  
- ✪ *University of Dhaka*, Dhaka, Bangladesh (Apr. 1996 – Mar. 1998)  
*Degree:* M.Sc. in Microbiology  
*Supervisor:* Professor Abdul Malek  
*Dissertation:* Screening of catabolite derepressed mutants of *Aspergillus fumigatus* for increasing saccharification of cellulosic materials
  
- ✪ *University of Dhaka*, Dhaka, Bangladesh (Apr. 1990 – Mar. 1996)  
*Degree:* B.Sc. in Microbiology

**AWARDS AND HONORS**

- Japanese Government (Monbusho) Scholarship
- Russian Govt. Postgraduate Scholarship (selected through Bangladesh Ministry of Education)
- “Dean’s Award” from the Faculty of Biological Sciences, University of Dhaka, Bangladesh
- Postgraduate Bangladesh Government Scholarship
- Undergraduate Bangladesh Government Scholarship
- “Bangladesh Junior Chamber’s Award” for outstanding services

**RESEARCH EXPERIENCE**

- ✪ *Lawrence Livermore National Laboratory*, University of California, USA  
*Position:* Postdoctoral Staff Member (Mar. 2005 – present)  
*Research:*
  - Method development for metabolomics study from individual cells based on <sup>14</sup>C-labeling experiments and Accelerator Mass Spectrometry for aging research
  - Analysis of how calorie restriction regulates aging process in a model organism *Saccharomyces cerevisiae*
  
- ✪ *Dept. of Bioscience and Bioinformatics*, Faculty of Computer Science and Systems Engineering, Kyushu Institute of Technology, Japan  
*Position:* Research Assistant Professor (Apr. 2003 – Feb. 2005)

*Research:*

- Investigation on biodegradable plastic synthesis in *Escherichia coli*
- Metabolic regulation analysis of different mutant *Escherichia coli* based on gene expressions (RT-PCR and DNA microarray), protein expressions (2D-PAGE) and metabolic fluxes (<sup>13</sup>C-labeling experiments followed by GC-MS & NMR analyses) together with measurement of key enzyme activities and intracellular metabolites

*Teaching:*

- Teaching on Biotechnology, Biochemistry and Molecular Biology
- Instructions on laboratory experiments

### **OTHER EXPERIENCE**

✦ *Institute of Food and Radiation Biology*, Atomic Energy Research Establishment, Dhaka, Bangladesh

*Position:* Scientific Officer (Jan. 2000~)

✦ *Department of Microbiology*, Kazan State University, 18 Kremlovskaya Street, Tatarstan 420008, Kazan, Russia

*Position:* Postgraduate Research Fellow (Sep. 1999 – Jan. 2000)

✦ *Dogma Diagnosis (Pvt.) Limited*, Dhaka, Bangladesh

*Position:* Consultant Microbiologist (Apr. 1998 – Aug. 1999)

### **TRAINING**

- Completed online “Bioinformatics” courses conducted by S-Star.Org (<http://www.s-star.org/5thcourseresults.xls>.)
- Participated in “Commonwealth Youth Program” supervised by Bangladesh Ministry of Education and awarded as a fellow to visit the member countries of the South Asian Association for Regional Cooperation (SAARC)

### **MEMBERSHIP**

- American Association for the Advancement of Science (AAAS)
- Life member of “Graduate Microbiologist Association”, Bangladesh
- Former member of “The Society for Biotechnology”, Japan
- Former member of “The Society of Chemical Engineers”, Japan
- Former member of “Toastmasters International”, USA

### **PUBLICATIONS**

1. Vogel, J. S., Palmblad, N. M., Ognibene, T., **Kabir, M. M.**, Buchholz, B. A., and Bench, G. Biochemical paths in humans and cells: Frontiers of AMS bioanalysis. *Nucl. Instr. Methods Phys. Res. B*, in press, 2006.
2. **Kabir, M. M.**, and Shimizu, K. Investigation into the effect of *soxR* and *soxS* genes deletion on the central metabolism of *Escherichia coli* based on gene expressions and enzyme activities. *Biochem. Eng. J.*, 30:39-47, 2006.
3. **Kabir, M. M.**, Ho, P. Y., and Shimizu, K. Effect of *ldhA* gene deletion on the metabolism of *Escherichia coli* based on gene expression, enzyme

activities, intracellular metabolite concentrations, and metabolic flux distribution. *Biochem. Eng. J.*, 26:1-11, 2005.

4. **Kabir, M. M.**, and Shimizu, K. Metabolic regulation analysis of *icd*-gene knockout *Escherichia coli* based on 2D electrophoresis with TOF-MS and enzyme activity measurements. *Appl. Microbiol. Biotechnol.*, 65:84-96, 2004.
5. **Kabir, M. M.**, and Shimizu, K. Fermentation characteristics and protein expression patterns in a recombinant *Escherichia coli* mutant lacking phosphoglucose isomerase for poly (3-hydroxybutyrate) production. *Appl. Microbiol. Biotechnol.*, 62:244-255, 2003.
6. **Kabir, M. M.**, and Shimizu, K. Gene expression patterns for metabolic pathway in *pgi* knockout *Escherichia coli* with and without *phb* genes based on RT-PCR. *J. Biotechnol.*, 105:11-31, 2003.
7. **Kabir, M. M.**, and Shimizu, K. Proteome analysis of a temperature-inducible recombinant *Escherichia coli* for PHB production. *J. Biosci. Bioeng.*, 92:277-284, 2001.

#### **MANUSCRIPTS IN PREPARATION**

1. **Kabir, M. M.**, Ognibene, T., Ubick, E. A., Lin, S-J., Vogel, J. S. and Bench, G. Simultaneous measurement of intracellular nicotinic acid, nicotinamide, NAD and NADH from a single sample preparation of yeast *Saccharomyces cerevisiae*.
2. **Kabir, M. M.**, Ubick, E. A., Ognibene, T., Palmblad, N. M., Lin, S-J., Vogel, J. S. and Bench, G. A method for quantitative metabolomics from individual cells based on <sup>14</sup>C-labeling experiments and Accelerator Mass Spectrometry for aging research.
3. **Kabir, M. M.**, Ognibene, T., Ubick, E. A., Lin, S-J., Vogel, J. S. and Bench, G. Role of NAD salvage pathway metabolites in regulating SIR2 protein of *Saccharomyces cerevisiae*.

#### **ABSTRACTS AND PRESENTATIONS**

1. **Kabir, M. M.**, Ognibene, T., Palmblad, M., Ubick, E. A., Lin, S-J., Vogel, J. S. and Bench, G. Metabolomics from single cells via AMS. *10<sup>th</sup> International Meeting of the Association of Biomolecular Resource Facilities (ABRF)*, February 11-14, 2006. Long Beach Convention Center, **Long Beach, California, USA.**
2. **Kabir, M. M.**, Ognibene, T., Ubick, E. A., Palmblad, M., Lin, S-J., Bench, G., and Vogel, J. S. Methods for single cell AMS. *10<sup>th</sup> International Conference on Accelerator Mass Spectrometry (AMS-10)*, September 5-10, 2005. University of California, **Berkeley, California, USA.**
3. Bench, G., Buchholz, B. A., Hillemonds, D., **Kabir, M. M.**, Ognibene, T., Palmblad, M., and Vogel, J. S. (2005). Frontiers of AMS in bioscience from cells to humans. *Workshop on "Accelerator Mass Spectrometry in Low Dose Bioscience"*, September 9, 2005. University of California, **Berkeley, California, USA.**
4. **Kabir, M. M.**, and Shimizu, K. Metabolic regulation analysis of *Escherichia coli* with *IdhA* gene knockout based on enzyme activities and gene expressions. *Annual Meeting of the Society for Biotechnology*, September 21-23, 2004. Meijyo University (Tenpaku Campus), **Nagoya, Japan.**

5. **Kabir, M. M.**, and Shimizu, K. The effect of *icdA* gene knockout on the metabolism of *Escherichia coli*. *Regional Meeting of the Society for Biotechnology*, December 13, 2003. Minami Kyushu Daigaku, **Miyazaki, Japan**.
6. **Kabir, M. M.**, and Shimizu, K. Metabolic pathway analysis of *pgi* knockout *Escherichia coli* for PHB production based on RT-PCR. *Annual Meeting of the Society for Biotechnology*, September 16-18, 2003. Kumamoto University (Kurokami Campus), **Kumamoto, Japan**.
7. **Kabir, M. M.**, and Shimizu, K. Metabolic flux analysis of *Escherichia coli* based on <sup>13</sup>C-labeling experiments and metabolic regulation analysis based on gene and protein expressions. *International Conference on Emerging Frontiers at the Interface of Chemistry and Biology (ICB-2003)*, April 28-30, 2003. Trivandrum, **Kerala, India**.
8. **Kabir, M. M.**, and Shimizu, K. Genetic and fermentation studies on the production of poly(3-hydroxybutyrate) by recombinant phosphoglucose isomerase knock-out *Escherichia coli*. *Regional Meeting of the Society for Bioscience and Bioengineering*, December 14, 2002. Ryukyu University, **Okinawa, Japan**.
9. **Kabir, M. M.**, and Shimizu, K. Proteome analysis of recombinant *pgi* knock-out *E. coli* for PHB production. *80<sup>th</sup> Anniversary of the Foundation and Annual Meeting of the Society for Bioscience and Bioengineering*, October 28-30, 2002. Grand Cube Osaka (Osaka International Convention Centre), Nakanoshima, Kita-ku, **Osaka, Japan**.
10. **Kabir, M. M.**, and Shimizu, K. Effect of culture condition on protein expressions of a recombinant *E. coli*. *67th SCEJ Annual Meeting of The Society of Chemical Engineers Japan*, March 27-29, 2002. Fukuoka Institute of Technology, **Fukuoka, Japan**.
11. **Kabir, M. M.**, and Shimizu, K. Proteome analysis together with metabolic flux distribution of a recombinant *E. coli* having *phb* genes. *Regional Meeting of the Society for Bioscience and Bioengineering*, December 8, 2001. Kyushu University, **Fukuoka, Japan**.
12. **Kabir, M. M.**, and Shimizu, K. Proteome analysis of recombinant *E. coli* with metabolic flux analysis for PHB production. *Annual Meeting of the Society for Bioscience and Bioengineering*, September 26-28, 2001. Yamanashi University, Kofu, **Yamanashi, Japan**.
13. **Kabir, M. M.**, and Shimizu, K. Proteome analysis of a temperature-induced recombinant *E. coli* having *phb* genes for PHB production. *SCEJ Regional Meeting*, July 27, 2001. Senkyo Building (8th floor), **Fukui, Japan**.
14. **Kabir, M. M.**, and Shimizu, K. Proteome analysis of a recombinant *E. coli* having *phb* genes for PHB production. *66th SCEJ Annual Meeting of the Society of Chemical Engineers Japan*, April 2-4, 2001. Hiroshima University, **Hiroshima, Japan**.
15. **Kabir, M. M.**, and Shimizu, K. Proteome analysis of a temperature-inducible recombinant *E. coli* for PHB production. *Regional Meeting of the Society for Bioscience and Bioengineering*, December 9, 2000. Kyushu Institute of Technology, Iizuka, **Fukuoka, Japan**.
16. Shimizu, K., and **Kabir, M. M.** Analysis of microbial metabolic networks in consideration of the revelation of genetic control. *Conference on the*

*Genome Information Science*, September 22-23, 2000. Hotel Associa Shizuoka Terminal, **Shizuoka, Japan**.

17. Shi, H., Kyuwa, K., Takasu, M., **Kabir, M. M.**, and Shimizu, K. Temperature-induced expression of *phb* genes in *Escherichia coli* and effect of temperature patterns on the production of PHB. *Annual Meeting of the Society for Bioscience and Bioengineering*, August 3-5, 2000. Hokkaido University, Sapporo, **Hokkaido, Japan**.

## **REFERENCES**

- (1) **Professor Dr. Kazuyuki Shimizu**  
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