

DR. MOMOTAJ JAHAN

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CURRENT POSITION

Chairman

Department of Biochemistry & Molecular Biology, Trust University, Barishal (TUB)

(October 2022 - to date)

Assistant Professor

Department of Biochemistry & Molecular Biology, Trust University, Barishal (TUB)

(October 2022 -to date)

JOB RESPONSIBILITIES

- Arrange departmental meetings.
- Attend different general and central meeting
- Counsel students and work in a team environment.
- Perform any other work assigned by the management.
- Skills in how to call for an effective department meeting and have a productive conversation
- Conduct both face-to-face and online classes.
- Prepare lesson plans, lecture materials and developing curriculum.
- Take class tests, quizzes and exams.
- Teach students how to conduct biochemical experiment in the laboratory.
- Evaluate students' assignments.
- Set question papers and evaluate answer scripts.

RESEARCH EXPERIENCE

PhD Research, Department of Medical Biochemistry, Tokyo Medical & Dental University (2017-2022)

- Investigating the mammalian Hippo Tumor Suppressor Pathway whether is conserved in *C. elegans* or not
- Screening of *C. elegans* whole genome by feeding RNAi library
- Identification of one of the Mob1 family proteins, the Hippo core kinase activators of human Hippo signaling
- Focusing on *C. elegans* MOB-4, which is the homologue of human MOB4, proteins, and their products
- Preparing *mob-4* loss of function mutants by using CRISPR-Cas9 technique in *C. elegans*
- Observing abnormal phenotypes of *C. elegans mob-4* deficient mutants' worms
- Gaining insight into how *C. elegans* MOB-4 is involved in the regulation of *C. elegans* YAP-1, which is the transcriptional co-activator of human YAP1

Relevant Research Skills

- Preparation of transgenic reporter worms and double mutant constructs
- Outcrossing of mutant worms with reporter/wt background worms to analyze the effects of a particular gene
- Experience of some compounds treatment to observe stress in *C. elegans*
- qPCR analysis, and agarose gel electrophoresis
- Primer design, and DNA sequencing
- Skills in handling confocal fluorescence microscope, imaging processes and analysis
- Experience in standard molecular biology and genetics experiments

Experience of Cell line works

- Cell culture, transfection, and infection
- Immunoprecipitation, Co-immunoprecipitation, Subcellular fractionation, Protein purification
- Immunofluorescence assays, SDS-PAGE analysis, Western blot analysis, Phos-tag gel electrophoresis
- Quantitative RT-PCR analysis, Reporter assay

Biostatistics

- Student t-test, Log rank test, Graph pad prism analysis
- Operation of SPSS for data analysis

MSc Thesis Research, Department of Biochemistry & Molecular Biology, University of Rajshahi, Bangladesh (2014-2015)

- Investigating the effects of heavy metal (As, Pb, Sb, Mn, etc.) toxicities in arsenic endemic areas of Bangladesh
- Evaluating the effects of heavy metals on behavioral and biochemical changes in F₀ and F₁ mice
- Measuring the activities of different Biomarkers in treated and non-treated groups
- Assessing anxiety, spatial memory, and learning to observe behavioral changes in mice
- Analysis of tissue damages in treated and non-treated groups

AWARDS

Japanese Government (MEXT) Scholarship of 2017 as PhD Research Student

National Science & Technology (NST) Fellowship Award of 2013 as Master's Research student

EDUCATION

Examination	Passing Year	University/ Board	Subject/Group	Grade/CGPA
Doctor of Philosophy (Ph.D.)	March, 2022	Tokyo Medical & Dental University	Department of Medical Biochemistry	PhD Degree Earned
Master of Science (M.Sc.)	2013	University of Rajshahi	Biochemistry & Molecular Biology	A CGPA: 3.925/4.00 (First class first)
Bachelor of Science (B.Sc.)	2012	University of Rajshahi	Biochemistry & Molecular Biology	A CGPA: 3.76/4.00 (First class fourth)
Higher Secondary Certificate (HSC)	2007	Adamdighi Pilot Girls' High School & College	Science	A+ CGPA: 5.00/5.00
Secondary School Certificate (SSC)	2005	Adamdighi Girls' High School	Science	A CGPA: 4.94/5.00

TEACHING EXPERIENCE

Prime Institute of Science & Medical Technology (PRISMET), Rangpur, Bangladesh (2016-2017)

- Delivering lectures in the classroom of Basic Biochemistry, Clinical Biochemistry & Microbiology
- Teaching undergraduate students on how to conduct Biochemical experiments in the lab

TRAINING EXPERIENCE

- Inplant training in "Rajshahi Diabetic Association General Hospital" at Jhawtola, Rajshahi, Bangladesh
Duration: 7 days (as a part of BSc degree)

LANGUAGES PROFICIENCY

- English as medium of education (fluent in writing and speaking)
- Bengali (Native language)

IT SKILLS

- **Microsoft Office:** Microsoft Word (thesis and publications), PowerPoint (conference presentations), Excel (data analysis)
- **Application Packages:** Adobe Photoshop, GIMP (Revision 3), Image-J
- **Communication skill:** Internet, e-Mail, LinkedIn, ResearchGate etc.

PUBLICATIONS

- **Jahan, M.**, Iwasa, H., Kuroyanagi, H., and Hata, Y. (2021). Loss of *Caenorhabditis elegans* homologue of human MOB4 compromises life span, health life span, and thermotolerance. ***Genes to cells***, 6 August 2021. 00, 1-9. <https://doi.org/10.1111/gtc.12891>
- Biswas, S., Banna, HU., **Jahan, M.**, Anjum, A., Siddique, AE., Roy, KA., Nikkon, F., Salam, KA., Haque, A., Himeno, S., Hossain, K., Saud, ZA. (2019). *In vivo* evaluation of arsenic-associated behavioral and biochemical alterations in F₀ and F₁ mice. ***Chemosphere.***, 9 December 2019. <http://doi.org/10.1016/j.chemosphere.2019.125619>
- Tanu, T., Anjum, A., **Jahan, M.**, Nikkon, F., Haque, M., Roy, KA., Haque, A., Himeno, S., Hossain, K., Saud, ZA. (2018). Antimony-Induced Neurobehavioral and Biochemical Perturbations in Mice. ***Biol. Trace Elem. Res.***, 26 February 2018. <https://doi.org/10.1007/s12011-018-1290-5>
- Aktar, S., **Jahan, M.**, Alam, S., Mohanto, NC., Arefin, A., Khatun, R., Hossain, K., Saud, ZA. (2016). Individual and Combined Effects of Arsenic and Lead on Behavioral and Biochemical Changes in Mice. ***Biol. Trace Elem. Res.***, 19 October 2016. Vol. 177:288-296. DOI 10.1007/s12011-016-0883-0
- Islam, MS., Mohanto, NC., Karim, MR., Aktar, S., Hoque, MM., Rahman, A., **Jahan, M.**, Khatun, R., Aziz, A., Saud, ZA., Hossain, M., Rahman, A., Mandal, A., Miyataka, H., Himeno, S., Hossain, K. (2015). Elevated concentrations of serum matrix and metalloproteinase-2 and -9 and their associations with circulating markers of cardiovascular diseases in chronic arsenic-exposed individuals. ***Environmental Health.***, 2015, 14:92. DOI 10.1186/s12940-015-0079-7

"WORKING PAPER" TENTATIVE SUBMISSION DATE (2022-2023)

- Whole-genome screening by using a transcriptional reporter system in *C. elegans*
- Focusing on a specific candidate gene (protein kinase) and their products in comparison to a positive control
- Analysis of hippo component deletion mutations on candidate gene's RNAi driven expression of the reporter system
- Observing of hippo component deletion mutations on the embryonic lethality by feeding candidate gene's RNAi
- Monitoring effects of candidate gene's RNAi on embryonic development in N2 (wild-type) and mutant worms

ATTENDING ACADEMIC WORKSHOP

- Attending the motivational workshop organized by Bangladesh Accreditation Council (BAC) on **31 May 2023** at Patuakhali Science and Technology University Auditorium, Patuakhali.

CONFERENCE (POSTER PRESENTATION)

- **Jahan, M.**, Tanu, T., Aktar, S. Effect of arsenic and lead on the serum biomarkers for liver function tests in F₀ and F₁ mice. Abstract published and poster presented in the 2nd International South Asian Biotechnology Conference, Dept of Biochemistry and Molecular Biology, Dhaka University, Bangladesh, 5th-6th February, 2016

- Aktar, S., **Jahan, M.**, Tanu, T. Combined effects of arsenic and lead on behavioral and biochemical changes in mice. Abstract published and poster presented in the BSBMB conference on “Biochemistry, Industry and Sustainable Economy”, Dept of Biochemistry and Molecular Biology, Dhaka University, Bangladesh, 21th March, 2015

CONFERENCE PROCEEDINGS

- “Effect of arsenic and lead on the serum biomarkers for liver function tests in F₀ and F₁ mice”. **Momotaj Jahan**, Sharmin Aktar, Tanzina Tanu, Nayan Chandra Mohanto, Rabeya Khatun, M. Hasibuzzaman, Khaled Hossain, and Zahangur Alam Saud. (Abstract published and poster presented in the 2nd International South Asian Biotechnology Conference. Organized by Dept. of Biochemistry and Molecular Biology at Dhaka University, Bangladesh by February 05-06, 2016).
- “Combined effect of arsenic and lead on behavioral and biochemical changes in mice”. Sharmin Aktar, Nayan Chandra Mohanto, **Momotaj Jahan**, Rabeya Khatun, Tanzina Tanu, M.M. Hasibuzzaman, Khaled Hossain and Zahangir Alam Saud. (Abstract published and poster presented in the BSBMB conference on “Biochemistry, Industry and Sustainable Economy”. Organized by Dept. of Biochemistry and Molecular Biology at Dhaka University, Bangladesh by March 21, 2015).
- “A pilot study on critical windows of children’s exposure to arsenic”. Afroza Arefin, M. M. Hasibuzzaman, Rabeya Khatun, **Momotaj Jahan**, Tanzina Tanu, Md. Shofikul Islam, Md. Rezaul Karim, Nayan Chandra Mohanto, Seiichiro Himeno and Khaled Hossain. (Abstract published and poster presented in the BSBMB conference on “Biochemistry, Industry and Sustainable Economy”. Organized by Dept. of Biochemistry and Molecular Biology at Dhaka University, Bangladesh by March 21, 2015).
- “Ameliorating effect of Brassica oleracea sprout against sodium arsenate-induced perturbation of blood indices”. Rabeya Khatun, **Momotaj Jahan**, Nayan Chandra Mohanto, Tanzina Tanu, Zahangir Alam Saud and Khaled Hossain. (Abstract published and poster presented in the “International conference on Biological Sciences: Food, Health and Environmental Perspectives”. Organized by Institute of Biological Sciences (IBSc) at Rajshahi University, Bangladesh by August 8, 2015).
- “Investigation of the maternal and children exposure to arsenic through pilot study”. M. M. Hasibuzzaman, Afroza Arefin, Rabeya Khatun, **Momotaj Jahan**, Tanzina Tanu, Nayan Chandra Mohanto, Md. Shofikul Islam, Seiichiro Himeno and Khaled Hossain. (Abstract published and poster presented in the “International conference on Biological Sciences: Food, Health and Environmental Perspectives”. Organized by Institute of Biological Sciences (IBSc) at Rajshahi University, Bangladesh by August 8, 2015).
- “Arsenic exposure-related elevation of serum MMP-9 levels and its associations with circulating markers of cardiovascular diseases”. Nayan Chandra Mohanto, Md. Shofikul Islam, Sharmin Aktar, Atiqur Rahman, **Momotaj Jahan**, Rabeya Khatun, Tanzina Tanu, M. M. Hasibuzzaman, Seiichiro Himeno and Khaled Hossain. (Abstract published and poster presented in the “International conference on Biological Sciences: Food, Health and Environmental Perspectives”. Organized by Institute of Biological Sciences (IBSc) at Rajshahi University, Bangladesh by August 8, 2015).
- “A pilot study on human exposure to arsenic through rice consumptions in Bangladesh”. Shahnur Alam, Afroza Arefin, Nayan Chandra Mohanto, Mashiur Rahman, Sharmin Aktar, **Momotaj Jahan**, Shakhawoat Hossain, Md. Imam Hossain, Abdul Aziz, Md. Shofikul Islam, Seiichiro Himeno and Khaled Hossain. (Abstract published and poster presented in the international conference on “Biotechnology for Better Tomorrow” at university of Rajshahi, Bangladesh by March 29, 2014).
- “Analysis of arsenic in vegetables: The results of a pilot study conducted in arsenic-endemic North-West region of Bangladesh”. Afroza Arefin, Md. Shofikul Islam, Nayan Chandra Mohanto, Shahnur Alam, Mashiur Rahman, Sharmin Aktar, **Momotaj Jahan**, Shakhawoat Hossain, Md. Imam Hossain, Abdul Aziz, Khairul Islam, Parvez Haris, Seiichiro Himeno and Khaled Hossain. (Poster presented at American society for microbiology (ASM) scientific workshop” held at icddr’b in Dhaka, Bangladesh by April 11, 2014).

ATTENDING CONFERENCES

- A conference on “2nd International South Asian Biotechnology Conference-2016” at Senate Bhaban, University of Dhaka, Bangladesh. Organized by Dept. of Biochemistry & Molecular Biology, on 05-06 February, 2016.

- A seminar on “Cellular absorption and Mechanism of action Calcium and Zink” Held at the University of Rajshahi, Bangladesh. Organized by Professor Dr. Seiichiro Himeno, Tokushima Bunri University, Japan on 10 March, 2016.
- A seminar on “International Centre for Diarrheal Disease and Research, Bangladesh (icddr,b)” held at the University of Rajshahi, Bangladesh. Organized by Dr. Firdousi Qadri, Dept. of Biochemistry & Molecular Biology, University of Dhaka on 14 June, 2015.
- **Bangladesh Society for Biochemistry and Molecular Biology National Conference On “Biochemistry Industry and Sustainable Economy”** held at the University of Dhaka, Bangladesh on 21 March, 2015.
- A seminar on “Immunologic Recognition of Melanoma” held at the University of Rajshahi, Bangladesh. Organized by Assistant Professor Dr. Azizul Haque, Medical University of South Carolina, USA on 27 July, 2015.
- A seminar on “Risk factors of hospital acquired infections among patients admitted in a selected hospital in Dhaka” Held at the University of Rajshahi, Bangladesh. Organized by Md. Al Jahid Hasan Chowdhury, Ph.D. Fellow on 12 September, 2015.
- International conference on “Biological Sciences: Food, Health and Environmental Perspectives” (ICBSc-2015) held at the University of Rajshahi, Bangladesh. Organized by Institute of Biological Sciences on 08 August, 2015.

PERSONAL ATTRIBUTE

- Ability to cope up with situations quickly & efficiently
- Ability to work under pressure & fulfill deadlines
- Willingness to accept responsibility, being responsible, taking initiative and performs accordingly
- Creative thinker with the ability to produce creative & pragmatic solutions to complex issues
- Good interpersonal skills with the ability to achieve results by influence & persuasion
- Excellent presentation, counseling skills and ability to design promotional material

REFEREES

1. Prof. Yutaka Hata, M.D., Ph.D., Dept of Medical Biochemistry, Tokyo Medical & Dental University, +81-3-5803-5164, yuhammch@tmd.ac.jp
2. Prof. Zahangir Alam Saud, Ph.D., Dept of Biochemistry & Molecular Biology, University of Rajshahi, +8801711302389, zasaud@ru.ac.bd
3. Prof. Khaled Hossain, Ph.D., Dept of Biochemistry & Molecular Biology, University of Rajshahi, +8801726884046, khossainbio@gmail.com