

KAFI MD ABDULLAH AL

Profile Summary

As a young scientist, I have always been fascinated by research in cellular and molecular biology. In addition to my home university education, I have also been selected for three different ERASMUS+ fellowships at other European institutions. Having these fellowships broadened my international perspective and taught me the true value of a research career. Due to my passion for an academic career, I was appointed as a didactic tutor at my home university. In order to achieve my academic goal with greater zeal, I would like to devote myself to attaining my PhD in pathobiology.

Education and Training

Masters in Molecular Diagnostics and Biotechnology University of Camerino, Italy Final grade: 110/110 cum laude	[01/09/2019 – 13/10/2022]
ERASMUS+ Exchange Scholarship Alexandru Ioan Cuza University, Romania	[27/09/2020 – 13/06/2021]
ERASMUS Traineeship Institute of Technical Biochemistry (IBT), Poland	[01/03/2019 – 30/06/2019]
ERASMUS+ Exchange Scholarship Lodz University of Technology, Poland	[18/08/2017 – 16/02/2018]
Bachelors in Biotechnology University of Camerino, Italy Final grade: 104/110	[01/10/2015 – 19/07/2019]
Higher Secondary School Notre Dame College, Dhaka, Bangladesh Final grade: GPA 5.00/5.00	[11/05/2011 – 30/09/2014]
Secondary School R.D.A laboratory School and College, Bogra, Bangladesh Final grade: GPA 5.00/5.00	[01/01/2004 – 31/12/2010]

Work Experience

Didactic Tutor School of Bioscience and Veterinary Medicine, University of Camerino, Italy	[01/10/2021 – 30/07/2022]
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Based on my academic performance and experience, the Department of Bioscience and Biotechnology recruited me as a didactic tutor. My main role was to chaperone undergraduate students through laboratory activities, especially molecular biology lab techniques.

Research Experience

Master's Degree Thesis - Effect of Choline Alphoscerate and Thiocctic acid in the brain of the cerebrovascular animal model

This study aims to investigate the effects of two several compounds in the animal model of cerebrovascular disease, spontaneously hypertensive rats (SHR), alone or in an association combination to determine their efficacy in terms of neuroprotection. The 24- week-old SHRs were treated for 4 weeks with alpha-glyceryl-phosphorylcholine (α -GPC) (150 mg/kg/day) and Thiocctic acid [(+)-TIO] (125 μ mol/kg/day) alone or in combination. We used age matched normotensive Wistar Kyoto (WKY) rats as the control. After treatment, the frontal cortex and the hippocampus of animal models were collected for western blot and immunohistochemistry techniques to investigate the neuronal, cholinergic, and neuroinflammatory markers.

Performed Lab Techniques and animal handling -

Animal Handling

- Experienced with animal handling
- Comfortable with surgery

Molecular biology

- DNA and RNA extraction, qRT-PCR, and qPCR

Immunohistochemical techniques

- Tissue fixation and Paraffin embedding
- Sample cutting with the microtome and vibratome
- Staining techniques (Masson Tricromic, Nissl Technique, Hematoxylin and Eosin, Cresyl Violet, Congo Red)
- Immunofluorescence labeling and detection by confocal microscopy

Immunochemical techniques

- Western Blotting

Bachelor Degree Thesis - Microanatomical study of the muscarinic acetylcholine receptors in the brain of obese rats

As part of my study, I examined the link between obesity-mediated cognitive function alteration and pathological neurodegenerative cognition, particularly its impact on the cholinergic system. Rodent models that mimic obesity are an important tool for testing the interactions between visceral adiposity and cognitive impairment.

My research evaluates the muscarinic receptors - M1, M3, and M5 in diet-induced obesity rats (DIO rats) compared to the control rats with a standard diet (CHOW), after 5 and 17 weeks of diet. The investigation was carried out through immunochemical and immunohistochemical techniques, evaluating the expression of these parameters at the level of the frontal cortex and of hippocampus.

ERASMUS Traineeship - Filamentous fungi as a source of lipases, other products, and biocatalysts in the micro water environment

Task carried out during this traineeship period –

- Execution of *Mucor Racemosus* oleaginous and lipolytic strain cultures
- Enzymatic activities determination of intracellular lipases
- Biocatalysis in a micro-water environment includes – the determination of water concentration by using Karl-Fisher method, water activity by a Rotronic sensor
- Extracted lipid substances analysis by chromatographic methods – Solid Phase Extraction method (SPE), Thin Layer Chromatography (TLC) & Gas Chromatography (GC)
- Insulin and cAMP synthesis measurement in the MIN6 cell line with EISA

Technical Skill

Microscopy – Confocal microscopy (Leica SP8, Leica SP5), Zeiss widefield scanner, Nikon Eclipse FN1

Image analysis Software – Nikon Ni-Elements, Image j, MetaMorph, Zen Blue V3, NeuroLucida, NeuroLucida 360

Statistical analysis – R/R-Studio, GraphPad prism

Language Skill

Bengali → Mother language

English → Proficient User*

Italian → Independent User

*As an international student in Italy, both my bachelor's and master's degrees were taught entirely in English.

Reference

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