UNIVERSITY OF KARACHI

Self-Assessment Report
Department of Biochemistry,
University of Karachi

Submitted to

Quality Enhancement Cell
University of Karachi

ASSESSMENT TEAM:
Prof. Dr. Tabassum Mehboob (Chairperson)

PROGRAMME TEAM

Prof. Dr. Samina Bano (Professor)
Dr. Yasmeen Rashid (Assistant Professor)
Dr. Muhammad Farhan (Assistant Professor)

CONTENTS

INTRODUCTION

Biochemistry at University of Karachi started as part of the Department of Chemistry in 1962 under the Chairmanship of Dr. Rafiq Ahmed. Dr. MA Wali, Dr. Zain-ul-Abedin and Dr. Sabir Ali have served as Department Chairs. During the tenure of the first three Chairs research within the Department was closely associated with the interests of the Chairs and was mentor to many scientists as they established their research careers here. Through its history since then the department has flourished under the direction of eleven chairpersons and currently have 27 faculty members and a MPhil/PhD program for which the degrees have been granted in the department since 1975.

Research work at molecular level led to an era of explosive productivity within the department and the training of a whole generation of young scientists, many of whom went on to distinguished careers in Biochemistry. With the creation of an independent department, the faculty expanded slowly to include three professors by 1970; 12 professors by 2007 and now 27 faculty members in 2012. Student enrollment and PhDs awarded also increased as the department expanded with increase in the annual scientific productivity. In recent years an average doctoral student had just over 3 co-authored papers from dissertation research, and is first author on two papers.

The department sets out to meet a key goal of modern biology – to arrive at a full understanding of the structure and dynamic chemistry of the underlying molecular constituents of cells, the essential feature is that biochemistry uses molecular methods to explain biological processes. The focus of research has shifted towards molecular biochemistry, genomics and proteomics, biotechnology, cellular biophysics and structural biology, clinical biochemistry, biochemical neuropharmacology, bioinformatics, nutritional biochemistry with several independent groups engaged in studies in molecular structure determination, molecular mechanisms of membrane trafficking, protein folding, and signal transduction.

The Department of Biochemistry now covers such a wide range that it is difficult to draw a demarcation around biochemistry it provides a multidisciplinary and collaborative setting that brings together cell biologists, neurochemists , clinical biochemists, biophysicists, nutritionists, enzymologist, geneticists, systems/computational biologists and structural biologists which provides the foundations of pathology, pharmacology, physiology, genetics. The research programs of most of the faculty within the Department revolved around these central themes. Major projects within the Department involved the understanding of the mechanism and regulation of enzymes, clinical chemistry, biotechnology, behavioral neuropharmacology, protein-protein interactions, characterization of proteins in disease conditions using 2-DE and Mass Spectrometry, Western blotting, HPLC and the structure of proteins using biophysical methods such as ultracentrifugation and electron microscopy.

Subsidiary student teaching remains an important role of department faculty. The Biochemistry faculty members are principally involved in the first Basic Science course, Molecules, Genes, and Cells to approximately 1200 students per year. Graduate students are the leaders of tomorrow and play a critical role in keeping the department at the forefront of international research. Many of whom went on to distinguished careers in Biochemistry like faculty at the world renowned Universities like Harvard University and NIH USA .

Over the years, faculty in the Department of Biochemistry has received considerable recognition, including receipt of major University awards, election to the National Academy of Sciences, International Advisory committee members and International Scientific Society Council members. We are proud of our history and current status, and we strive towards continued excellence in research, training, and service in the field of biochemistry.

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Chairperson
Department of Biochemistry
University of Karachi

CRITERION-1

PROGRAMMEMISSION, OBJECTIVES AND OUTCOMES

Mission of the Department of Biochemistry

The mission of Department of Biochemistry, University of Karachi, is to primarily serve the nation by imparting quality education which inculcates critical thinking, moral values and professional skills in its recipients and prepare them for exemplary leadership roles; and to promote intellectual innovation and impactful research that address the challenges of the nation, region and the world at large.

Mission Statement of the M. Phil./Ph.D. Programme

The mission of M.Phil./Ph.D. program is to produce ethically and professionally sound researchers who can perform their responsibilities in a good way. The program puts a lot of emphasis on developing communication skills by enforcing students to attend research-oriented seminars, group meetings and manuscript writing.

Standard 1-1: The Programme must have documented measurable objectives that support college and Institution mission statement.

Objectives of the programme

Our students from different levels would be able to fulfil following objectives

i. To carry out independent laboratory investigations of research problems
ii. To contribute to the advancement of knowledge in biochemical sciences
iii. To learn to search and use biochemical and related literature to acquire up-to-date information about current problems and to critically analyze current work
iv. To receive professional training for the enhancement of employability at global scale

Table: Programme Objectives Assessment

S. No.	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	To carry out independent laboratory investigations of research problems				
2.	To contribute to the advancement of knowledge in biochemical sciences				
3.	To learn to search and use biochemical and related literature to acquire up-to-date information about current problems and to critically analyze current work				
4.	To receive professional training for the enhancement of employability at global scale				

Surveys are in progress

Standard 1-2: The programme must have documented outcomes for graduating students. It must be demonstrated that the outcomes support the programme objectives and that graduating students are capable of performing these outcomes.

PROGRAMME OUTCOMES

After completion of the M.Phil./Ph.D. programme, the students shall be able to:

i. Discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality in a peer-reviewed journal

ii. Present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional practice

iii. Independent and proactive formulation of novel ideas and hypotheses in order to design, develop, implement and execute good research projects

iv. Critical and creative evaluation of current issues, research and advanced scholarship in the discipline

Standard 1-3: The results of programme's assessment and the extent to which they are used improve the programme must be documented.

a) Strengths and Weaknesses of the Programme

i) Strengths:

- Department has Twenty Ph.D. teachers while remaining are pursuing for the same.
- Class rooms, Lecture hall and well-equipped labs.

ii) Weaknesses

- Insufficient and delayed funds constraining smooth running of labs, maintenance and updating of instruments, fields and departmental matters

b) Future Development Plans

Following surveys would be conducted on semester basis:

- Teacher Evaluation survey
- Student's course evaluation survey

Standard 1-4: The department must assess its overall performance periodically.

a) Student Enrolment

S. No	Year	Degree	
		M.Phil.	Ph.D.
1	2014	15	3
2	2015	18	5
3	2016	15	1

b) Student/Faculty Ratio:

Minimum: 1:1 Maximum: 5:1

c) Time for M.Phil.: 2 years

Time for Ph.D. 2-3 years after M.Phil.: 2-3 years

d) The average student grade point (CGPA): 3.0

e) Student/Faculty Satisfaction

Faculty members are responsible for giving knowledge and communication and working skills to their students. Faculty gets satisfied by taking tests and semester exams of the students in addition to their attendance. Students are satisfied by assessment in terms of oral presentations, viva voce, assignments and seminars.

CRITERION-2

CURRICULUM DESIGN AND ORGANIZATION

Programme of Studies offered

Year / Semester wise Scheme of Studies of M.Phil. Programme

Semester-I

S. No	Course Code	Course Title
1	BCH-711	Research Methods in Biochemistry
2	BCH-715	Advance Molecular Genetics and Genetic Engineering
3	BCH-716	Biochemical Aspects of Haematology
4	BCH-717	Biotechnology-I
5	BCH-719	Medical Biophysics-I
6	BCH-722	Molecular Neuropharmacology of Drug Action

Semester-II

S. No	Course Code	Course Title
1	BCH-712	Techniques in Biochemical Research
2	BCH-713	Advanced Clinical Biochemistry
3	BCH-717	Biotechnology-II
4	BCH-718	Environmental Influence on Brain
5	BCH-720	Medical Biophysics-II
6	BCH-724	Nutritional Neuroscience
7	BCH-725	Protein Bioinformatics

Scheme of Studies of Ph.D. Program

S. No	Course Code	Course Title
1	BCH-801	Research Seminar
2	BCH-802	Research Seminar on Current Advances
3	BCH-803	Thesis and Manuscript Writing Skills
4	BCH-804	Development of Research Proposal for Funding Agencies

Standard 2-1: The Curriculum must be consistent and support the programme's documented objectives

The following table manifests how the programme content (Courses) meets the Programme Objectives.

Courses	Programme's Objectives			
	1	2	3	4
Major Courses	BCH-711	BCH-712	BCH-801, BCH-802	BCH-803, BCH-804
Elective Courses	BCH-715,	BCH-717, BCH-	BCH-712, BCH-	BCH-720,BCH-

	BCH-716	719, BCH-722	713, BCH-717, BCH-718	724, BCH-725

Standard 2-2: Theoretical background, problem analysis and solution design must be stressed within the programme's core material.

The following table indicates the elements covered in core courses:

Elements	**Courses**
i) Theoretical Background	BCH-711 BCH-712 BCH-715, BCH-716 BCH-717, BCH-719, BCH-722 BCH-712, BCH-713, BCH-717, BCH-718 BCH-720,BCH-724, BCH-725, BCH-801, BCH-802, BCH803, BCH-804
ii) Problem Analysis	BCH-711 BCH-712 BCH-715, BCH-716 BCH-717, BCH-719, BCH-722 BCH-712, BCH-713, BCH-717, BCH-718 BCH-720,BCH-724, BCH-725,BCH-801, BCH-802
iii) Solution Design	BCH-711 BCH-712 BCH-715, BCH-716 BCH-717, BCH-719, BCH-722 BCH-712, BCH-713, BCH-717, BCH-718 BCH-720,BCH-724, BCH-725, BCH-803, BCH-804

Standard 2-3: The curriculum must satisfy the core requirements for the programme, as specified by the respective accreditation body.

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Standard 2-4: The curriculum must satisfy the major requirements for the programme, as specified by the respective accreditation body/council.

The curriculum adopted by Department of Geology has been approved by Academic Council, competent authority and statutory bodies of University of Karachi

2-5: The curriculum must satisfy the general education, arts and other discipline requirements for the Programme as specified by the accreditation body.

N/A

Standard 2-6: Information technology component of the curriculum must be integrated throughout the programme.

The department offers a course BCH-725 i.e. Protein Bioinformatics, which involves usage of information Technology for analyzing biological data.

Standard 2-7: Oral and written communication skills of the student must be developed and applied in the programme.

Seminars, Workshops, and Internship Programs will also help in developing communication skills.

CRITERION-3

LABORATORY AND COMPUTING FACILITIES

Laboratory Facilities

- Two 3rd Year Labs
- Neurochemistry Lab
- Neuropharmacology Lab
- Molecular Biology Lab
- Clinical Lab

Computer Facilities

- A separate computer lab having 6 Core 2 Duo computers
- One separate computer in seminar library

Internet Facility

- Karachi University Main Communication Network (LAN)

Standard 3-1: Laboratory manuals/ documentation instruction for experiments must be available and readily accessible to faculty and students

Handouts/manuals of instructions relevant to experiments for all courses are available

Standard 3-2: There must be adequate support personnel for instruction and maintaining the laboratories.

Few trained personnel are available in laboratories for the support of students and teachers but still more proficient lab staff is required.

Standard 3-3: The University computing infrastructure and facilities must be adequate to support programme's objectives

The Department has adequate facilities to run the M.Phil./Ph.D. program effectively

i) Computing Facilities

Department has adequate networking computer facilities

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ii) Multimedia

Department has three overhead projectors but no multimedia

iii) Website

The university website http://www.uok.edu.pk has a link for Department of Biochemistry and each faculty member has its own official e-mail address.

iv) Internet

The department has Internet facility and all computers are interconnected with main communication network of the university

CRITERION-4

STUDENT SUPPORT AND ADVISING

Standard 4-1: Courses must have been offered with sufficient frequency and number for students to complete the programme in a timely manner.

Programme	Classes per Week	Practical Classes per Week
M. Phil/Ph.D.	Two lectures per week for 2+1 course	Three practical hours per week for 2+1 course.

Standard 4-2: Course in the major must be structured to ensure effective interaction between students, faculty and teaching assistants.

Course allocation is made in the faculty meeting for each semester chaired by head of department before the commencement of semester. Courses synopsis are distributed among students for the better understanding of course during introductory classes of the courses.

Standard 4-3: Guidance on how to complete the programme must be available to all students and access to academic advising must be available to make course decisions and career choices

The Chairman of the Department nominates two faculty members as "Students Advisors" who are available to all students for extra- and co-curricular activities, subject selection and career counseling. The Student Advisors and the Chairman help the students by providing information regarding career opportunities available for them.

The opportunities of job, membership in technical and professional societies are placed on the Notice Board by the Chairman of Department.

CRITERION-5

PROCESS CONTROL

Standard 5-1: The process by which students are admitted to the programme must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

Eligibility

- M.Phil.: M.Sc. Biochemistry
- Ph.D.: MS./M.Phil. in Biochemistry

Estimated Seats

- M.Phil.: 15
- Ph.D.: 5

Standard 5-2: The process by which students are registered in the programme and monitoring of students progress to ensure timely completion of the programme must be documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

Courses are completed timely. Monitoring procedures for students are documented regularly. Regular Teaching staff meetings are held in the department. Additional classes are adjusted, immediately after any unscheduled closure.

Standard 5-3: The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institutional mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives.

HEC rules with approval by the University Syndicate are applied for appointment. Teachers are encouraged to enhance their qualifications.

Faculty Recruitment / Retaining Policy
They are upgraded as they develop their academic skills.

Appointments / Promotions Procedure:
It is as per University Code Book**.**

Basic Pay Scale (BPS)
BPS 17

BPS 18
BPS 19
BPS 20

a. Lecturer (BPS- 18):

Minimum Qualification: M.Sc. in Biochemistry with first division

b. Assistant Professor (BPS- 19):

Minimum Qualification:

Ph.D. in Biochemistry or related discipline

OR
M.Phil. Biochemistry with 4 years relevant experience.

OR
M.Sc. Biochemistry with six (6) years relevant experience.

c. Associate Professor (BPS- 20)

Minimum Qualification: Ph.D. in Biochemistry or related field
Experience: 10 years experience of teaching/research in HEC recognized institution or industry
Minimum Number of Publications: 10 research publications in HEC/BASR recognized journals

d. Professor (BPS-21)

Minimum Qualification: Ph.D. in Biochemistry or related field
Experience: 15 years experience of teaching/research in HEC recognized institution or industry
Minimum Number of Publications: 15 research publications in HEC/BASR recognized journals

Bases for Appointments / Promotions

As per University of Karachi rules described in Code book.

Standard 5-4: The process and procedure used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives.

The methodology to ensure teaching and delivery of course material is as follows:

a. Schedule/ time table is followed by all faculty members
b. Chairman of the Department regularly gets feedback from the students during the semester.

Standard 5-5: The process that ensures that graduates have completed the requirements of the programme must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives.

a) The department ensures that the students are punctual and fulfill the attendance requirement i.e. 75%.

b) Promotions to the next year are restricted to only those who have cleared more than 80% courses.

c) Exams are regularly held.

CRITERION-6

FACULTY

Standard 6-1: There must be enough full time faculty who are committed to the programme to provide adequate coverage of the programme areas / courses with continuity and stability. The interest of all faculty members must be sufficient to teach all courses, plan, modify and update courses. The majority must hold a Ph.D. degree in the discipline.

The Department of Biochemistry is currently having the services of 22 regular faculty members. 20 of them are Ph.D.

Standard 6-2: All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programmes for faculty development must be in place.

Faculty members of Department of Biochemistry are considered current in the discipline based on the following criteria:

i) All teachers meet the HEC criteria for appointment in the respective cadre.

ii) Teachers generally participate in seminars, conferences at National / International levels.

iii) Teachers take interest in teaching and involve themselves in research and consultancy.

iv) Teachers are generally available in department.

v) Those who are engaged in improving qualification are provided relaxation in their teaching load.

Standard 6-3: All faculty members should be motivated and have job satisfaction to excel in their profession.

To help the faculty of Department of Biochemistry in their progress to excel in their profession, department make efforts to implement following strategies:

i) The department ensures fair, timely selection, appointment/promotion as per HEC criteria.

ii) Pleasant working environment exists for teaching, research and innovative technology program.

CRITERION-7

INSTITUTIONAL FACILITIES

Standard 7-1: The Institution must have the infrastructure to support new trends in learning such as E-learning.

a) Departmental library and Internet Facility

Departmental Seminar library has stock of about 950 books on various field of Biochemistry. Effort is made to acquire latest books. Subscription to international level Biochemical journals is required. The availability of the latest editions, new books and research journals is required.

b) Main Library

Faculty members and students of the department are allowed to use the main Library which has extended working hours. The main library provides the following services;

i. Reference books
ii. Research Journals
iii. Digital library having access to journals and E-books

c) Offices

The department of Biochemistry has adequate offices for the faculty members engaged in teaching and research.

d) Class Rooms

The department of Biochemistry has five class rooms and one lecture hall available for the students. An auditorium is required however for seminars/invited lectures.

Standard 7-2: The library must possess on up-to-date technical collection relevant to the programme and must be adequately staffed with professional personnel.

Department of Biochemistry have up-to-date seminar library along with a reference library and professional personnel to maintain these libraries.

Standard 7-3: Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibility.

Classrooms

Classrooms have white board facility. The facility of overhead projectors and multimedia needs to be improved.

Faculty Offices

Faculty offices are adequately equipped.

CRITERION-8

INSTITUTIONAL SUPPORT

Standard 8-1: There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teacher and scholars.

HEC may provide such support

Standard 8-2: There must be an adequate number of high quality graduate students, research assistants and Ph.D. Students

Degree Programme	**Years**		
	2014	**2015**	**2016**
B.Sc. (Hons.)	136	170	176
M.Sc.	86	96	140
M.Phil. + Ph.D.	15+3	18+5	15+1
Research/ Teaching Assistants	12	10	10

Student/Faculty Ratio (for the last three years): 2:1

Standard 8-3: Financial resources must be provided to acquire and maintain library holding, laboratories and computing facilities.

The University of Karachi provides financial resources to maintain seminar library, laboratories and computing facilities. The department, however, is not having the separate fund of its own to maintain and upgrade its library and computing facilities. HEC is also requested to provide additional financial resources for further strengthening of the Department.

Faculty CVs

Prof. Dr. Tabassum Mahboob

Curriculum Vitae

Name	Tabassum Mahboob
Current Position	***Meritorious Professor,*** and **Chairperson** Department of Biochemistry, University of Karachi and ***Director***, M.A.H. Qadri Biological Reseach Centre , University of Karachi.
Address (Res)	A-8 Staff Town University of Karachi. Karachi, Pakistan
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E-mail	**tab60@hotmail.com**, **tmehboob@uok.edu.pk**, **tabassumm60@gmail.com**

ACADEMIC QUALIFICATIONS

Ph.D. (Biochemistry)	1994	Karachi University	
M.Phil. (Biochemistry)	1987	Karachi University	
M. Sc. (Biochemistry)	1983	Karachi University	Ist. Division (III Position)
B. Sc (Hons)	1981	Karachi University	Ist. Division
Intermediate	1977	Karachi Board	Ist. Division
Matriculation	1975	Karachi Board	Ist. Division

TEACHING AND RESEARCH EXPERIENCE

Chairperson	Department of Biochemistry University of Karachi	25-07-2016 to date
Director	M. A. H. Qadri Biological Research Centre, University of Karachi	18-05- 2015 ------ to date.

Meritorious Professor	Department of Biochemistry, University of Karachi	08-03- 2014 ----to date
Professor	Department of Biochemistry, University of Karachi	01-01-2001---- 07-03-2014
Assistant Professor	Department of Biochemistry, University of Karachi	08-09-1991---- 31-12- 2000
Lecture	Department of Biochemistry, University of Karachi	07-01-1988 ---- 07-09-1991
Cooperative teacher	Department of Biochemistry, University of Karachi	01-08-1985 ---- 06-01-1988
Research fellow	Department of Biochemistry, University of Karachi	09-08-1984 ---- 31-07-1985

RESEARCH SUPERVISION

1. RESEARCH SUPERVISED

***(i)*Ph.D.:**

1.	S.M.Shahid	2008	Diabetic nephropathy and Hypertension: studies on electrolyte homeostasis and dyslipidemia
2.	Shafaq Noori	2011	Protective role of antioxidants on anticancer drug induced nephrotoxicity
3.	Najma Shaheen	2011	Effect of Calcium antagonists on calcium regulating factors, trace elements and electrolyte homeostasis in rats.
4.	Saqib H. Ansari	2012	Efficacy of Hydroxyurea in reducing blood transfusion requirement in children having beta thalassaemia.
5	Arshi Naz	2013	Assessment of Biochemical and Haemostatic risks in acute leukaemia.
6.	Nuzhat Fatima	2014	Studies on protective role of silymarin and trace elements supplementation on liver cirrhosis in rats.
7.	Lubna Naz	2015	Protective effects of Urtica Dioica and Taurine on carbon tetrachloride induced hepatotoxicity in rats.
8.	Ghazala Yasmin	2015	Effect of high density lipoprotein cholesterol on physiochemical Mediators in patients with ischemia.
9.	Nazish I Khan	2016	Protective role of lycopene and curcumin in the progression of atherosclerosis: study in hyperlipidemic rat models.
10	Abid Ali	2016	Antimicrobial, antioxidant and protective efficacy of flower and leaf extracts of Calotropis Procera against free radical damage.

(ii)M. Phil.

1.	Hina Akram	2006	Disturbances in Na-transport mechanisms and its relation to electrolytes and trace elements homeostasis in sickle cell disease.
2.	Roomana Rafique	2004	Clinical correlations among Electrolytes, Na-K-ATPase and Trace elements in Diabetes.
3.	Kausar Saboohi	2001	Clinical correlation among trace elements disturbances, hypertension and cardiovascular diseases

2. RESEARCH SCHOLARS ENROLLED FOR Ph.D.

1.	Arshia Tabassum	Effects of Rosiglitazone treatment on visfatin and insulin resistance in streptozotocin induced obese diabetic rats.
2.	Madiha Rehman	Association of interlukin genes polymorphism and antioxidant enzymes in gastric cancer.
3.	Sidra Bashir	Synergistic effect of angiotensin converting enzyme and angiotensin receptor blocker on visfatin and advance glycation end products in diabetic nephrophathy.
4.	Qurat ul Abedine	Identification of GBA gene in Pakistani patients with Gaucher's disease.
5.	Qudsia Hameed	Evaluation of potential effects of green synthesized silver nano particle by using Aloe barbadensis Miller extract on rats.
6.	Sehrish Shafeeq	Effects of Trace elements supplementation on herbicide (2,4-dichlorophenoxy acetic acid) induced toxicity.

M.SC RESEARCH SUPERVISED (THESIS AND PROJECTS)

1. Effect of aspirin on serum electrolytes (1986).
2. Effect of Monosodium glutamate on serum electrolytes (1987).
3. Effect of adrenaline on serum and tissue electrolytes in rabbits (1989).
4. Effect of indomethacine on serum electrolytes and osmolality. (1990).
5. Effect of KCl supplementation on intra and extracellular electrolytes in rats. (1993).
6. Studies on the effect of adrenaline on intraerythrocyte electrolytes. (1996).
7. Effects of atenolol on serum and red cell electrolytes in rats (1997).
8. Serum prostatic acid phosphatase, total acid phosphatase and their relation to serum electrolytes in patients with prostate carcinoma. (1998).
9. Changes in serum electrolytes in various cardiovascular diseases (1999).
10. Studies on the erythrocytes and plasma electrolytes in renal diseases (1999).
11. Alterations in serum and red cell electrolytes and their correlation with membrane Na-K-ATPase in hypertensive patients. (2000).
12. Studies on antioxidant effects of Captopril in rats.(2006)
13. Effects of ACE inhibitor on electrolyte homeostasis and Na-K-ATPase in rats. (2006)

14. Effect of Green tea on the activity of antioxidant and liver enzymes in CCL4 induced liver cirrhosis. (2007).
15. Preventive effect of green tea and coffee on rat model of CCl4 induced liver cirrhosis. (2007).
16. Preventive role of coffee drinking in Carbontetrachloride induced liver cirrhosis. (2007)
17. Biochemical Effectiveness of Cocoa powder on plasma electrolyte homeostasis, Liver and Renal functions in rat model. (2008)
18. Altered Oxidative status of rat liver, heart and kidney after cocoa powder administration. (2008)
19. Comparative effects of cinnamon powder and fresh Garlic extract on oxidative status of kidney, liver and heart tissue. (2009)
20. Antioxidant effect of sodium selenite on thioacetamide induced renal toxicity. (2010)
21. Angiotensin Converting Enzyme gene expression in cirrhotic rats. (2011)
22. Effect of curcumin, beta carotene on ACE gene expression, oxidative stress and antioxidant satatus in thioacetamide induced renal toxicity. (2012)
23. Effects of Lycopene on lipid peroxidation and oxidative stress on kidney tissues of wistar albino rats fed on high fat diet. (2013)
24. Visfatin gene polymorphism and risk of cardiovascular diseases in obesity. (2014)
25. Role of lycopene in dyslipidemia and renal insufficiency in rats on high fat diet. (2015)
26. Phytochemical screening and free radical scavenging activity of Martynia Annua. (2016)
27. Oxidative stress Biomarkers in Diabetes. (2016)
28. Evaluation of vitamin D and hepatic biomarker in Diabetes. (2016)
29. Hemostatic abnormalities in Dengue viral patients. (2016)
30. Spectrum of bleeding disorders in Pakistan. (2016)
31. Phytochemical screening and antioxidant activity of papaya leave extract. (2017)
32. Erythrocyte Na, K Transport in 2-4-D induced toxicity in rats.(2017)

RESEARCH GRANTS AWARDED

Funded by University grants commission/Higher Education Commision:

1.	Oxidative stress and single nucleotide polymorphism in Interlukin gene as disease marker in various cancers	2015 to date	Funded by Higher Education Commission
2.	Protective of antioxidants on anticancer drug induced nephrotoxicity.	2009-2011	Funded by Higher Education Commission
3.	Studies on electrolyte homeostasis and its relation to hypertension.	1991-1993	Funded by University Grants Commission

Funded by Dean Faculty of Science:

1.	Evaluation of antioxidant and antibacterial effects of green synthesized silver nanoparticles using leaf extract of magnolia champaca	2015- 2016
2.	Effect of Lycopene supplementation against high fat diet induced oxidative stress	2014
3.	Association of ACE gene expression and silymarin administration in experimentally induced liver cirrhosis in rats	2013
4.	Angiotensin converting enzyme (ACE) gene expression in experimentally induced liver cirrhosis in rats	2011-2012
5.	Ameliorative effect of ethanolic extract of Cichorium Intybus on cisplatin induced nephrotoxicity in rats	2009-2010
6.	Effect of angiotensin conversting enzyme inhibitor on oxidative stress and membrane electrolyte hemodynamics in rats	2007
7.	Effect of Diltiazem on Na-K-ATPase activity and electrolyte homeostasis in streptozotocin induced diabetic rats	2005
8.	Studies on calcium and sodium homeostasis in hypertensive diabetic patients, at risk of nephropathy	2003
9.	Role of trace elements status in the complications of Diabetes mellitus	2002
10.	Potentiality of sodium transport mechanism as a marker of predisposition to nephropathy, neuropathy and vascular diseases in Diabetes mellitus	2001
11.	Role of red cell, serum and tissue electrolytes in blood pressure lowering effects of beta blocking drugs	1999-2000
12.	Changes in blood levels of trace elements and electrolytes in hypertensive patients	1997-1998
13.	Effects of caffeine and stress on concentration and tissue distribution of elements in rats. Implication of Caffeine induced cardiovascular response to stress	1996-1997
14.	Synergistic effects of caffeine and stress on concentration and tissue distribution of elements in rats	1994-1995

List of Research Papers Published in National/International Journals:

1. Syeda Nuzhat Fatema Zaidi and Tabassum Mahboob
   Prevention of liver cirrhosis by silymarin Pak. J. Pharm. Sci., Vol.30, No.4, July 2017, pp.1203-1211 (I.F = 0.9)

2. Nazish I Khan, Shafaq Noori and Tabassum Mahboob
   Efficacy of Lycopene on modulation of renal antioxidant enzymes, ACE and ACE gene expression in hyperlipidemic rats. Journal of Renin Angiotensin Aldosterone system. September 27;17(3): 1-9, 2016. DOI: 10.1177/147032031666461.
   (I.F= 2.271)

3. Arshia Tabassum, Abid Ali, Romasha Babar and Tabassum Mahboob. Phytochemicals screening and free radical scavenging potential of leaf and flower extract of Calotropis procera. Journal of Pharmacognosy and Phytochemistry, 5(5): 47-50, 2016

4. Arshia Tabassum and Tabassum Mahboob.
   Effects of Peroxoxisomes proliferator activated receptor gamma agonist on oxidative stress biomarkers and insulin resistance in high fat diet induced obesity. International Journal of Biology and Biotechnology. 13 (4): 505-511, 2016

5. Arshia Tabassum and Tabassum Mahboob. Role of peroxisome proliferator activated receptor gamma agonist on hepatic oxidative stress and insulin resistance in high fat diet induced diabetes. International Journal of Sciences: Basic and Applied Research (IJSBAR) 29, (2), 277-289, 2016

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CONTRIBUTION IN SCIENTIFIC RESEARCH JOURNALS:

1. EDITOR IN CHIEF

   International Journal of Biology Research.

2. MEMBER EDITORIAL BOARD OF SCIENTIFIC RESEARCH JOURNAL

1. Journal of Pharmaceutical and Biological Sciences
2. Journal of Pharmacy and Nutrition Sciences

3. **INVITED REVIEWER OF SCIENTIFIC RESEARCH JOURNALS**

1. Basic and clinical Pharmacology and Toxicology.
2. African Journal of Biotechnology
3. Pakistan Journal of Biochemistry and Molecular Biology
4. Journal of Basic and Applied Sciences
5. Journal of Pharmacy and Nutrition Sciences
6. Issues in biological sciences and pharmaceutical research.

National/International Workshops, Conferences, Symposia organized, attended and participated:

1. Chief Organizer, First International conference on Life Sciences"Emerging trends in Biological Sciences and genomics" Biological Research Center, University of Karachi. 28-30 December, 2015
2. 17th National Health Sciences Research Symposium 2014 on "Noncommunicable Diseases", February 26-27, 2014, Agha Khan University, Karachi.
3. IInd International Conference on Environmental Horizon, January 1-4, 2014, Department of Chemistry , University of Karachi.
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5. ASOMP-XIV 14th. Asian symposium on Medicinal plants, spices and other natural products. December 9-12, 2013, ICCBS , KARACHI.
6. International symposium . Exploring Biochemistry: Molecular innovations and beyond. Department of Biochemistry, University of Karachi, December, 5, 2012. (PAKISTAN)
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21. 2nd National Biochemistry Symposium, 1993. (PAKISTAN)
22. Conference on Health and Disease (Role of magnesium in trace Minerals), New Delhi, 1993. (INDIA).
23. International Symposium on Contemporary Biology, 1991. (PAKISTAN)
24. First International Conference of Pharmaceutical Sciences, 1992. (PAKISTAN)
25. First National Biochemistry Symposium, 1992. (PAKISTAN)

26. 3rd International Conference on Trace Elements in Health and Disease., Turkey, 1991. (TURKEY)

27. National Chemistry Conference. (1989) Peshawar. (PAKISTAN)**.**

MEDALS AND AWARDS RECEIVED

1. PAMS Gold medal for outstanding research publication, 1997.
2. Cash award for junior research from Pakistan Academy of Medical Sciences, 1997.
3. Certificate of Appreciation in recognition of meritorious research work by chancellor (Governor of Sindh), 1997.

4. Nishan-e-Azmat o Danish from KUTS, 1998.

DR. SADAF NAEEM

Curriculum Vitae

Email address sadafnaeem_4@yahoo.com; snaeem@uok.edu.pk
Contact number +92(0)3312071530, +92-21-34810602

EDUCATION
FIELD OF SPECIALIZATION Computational Drug Design

PhD (Pharmaceutical Biophysics) King's College London, London, UK (2007-11)
Thesis: "Screening of Phytochemical Constituents from Traditional Indonesian Herbs for Inhibitors of Aldose Reductase"
Supervisor: Dr. Dave Barlow

Masters (Biochemistry) University of Karachi, 1995-96

Bachelors (Biological Sciences) University of Karachi, 1993-94

WORK EXPERIENCE

- **Associate Professor**, Department of Biochemistry, University of Karachi, Karachi, Pakistan (March, 2014 to date).

- **Assistant Professor**, Department of Biochemistry, University of Karachi, Karachi, Pakistan (November, 2011 to March, 2014).

- **Lecturer**, Department of Biochemistry, University of Karachi (June 2006 to November 2011; on study leave from December 2007 to November 2011).

- **Lecturer**, Department of Biochemistry, Jinnah University for Women, Karachi, Pakistan (June 2001 to June 2006).

LIST OF PUBLICATIONS (Impact Factor: 42)

- Uroosa Tariq, Shamim Mushtaq, **Sadaf Naeem** (2015)**.** BMJ Rapid Responses, Re: How Pakistan's media spreads the message about reproductive and sexual health. (URL: http://www.bmj.com/content/350/bmj.h1309/rr-1) (Impact Factor: 18)

- Ahtesham Ul Haq Naeem, Rizma Khan, **Sadaf Naeem** (2015). BMJ Rapid Responses, Re: How Pakistan's media spreads the message about reproductive and sexual health. (URL: http://www.bmj.com/content/350/bmj.h1309/rr-5) (Impact Factor: 18)

- Ambreen Hafeez, Afshan Naz, **Sadaf Naeem**, Khalida Bano, Naheed Akhtar (2013).Computational Study on the geometry Optimization and Excited State Properties of Riboflavin by ArgusLab4.0.1. Pak. Journal of Pharmaceutical Sciences. 26 (3); 487-93(Impact Factor: 1.103)

- **Sadaf Naeem**, Peter Hylands and David Barlow (2013). Docking Studies of Chlorogenic Acid against Aldose Redutcase by using Molgro Virtual Docker Software. *J. Applied Pharmaceu. Sc.* 3(01), 13-20.

- **Sadaf Naeem**, Uzma Asif, Asif Khan Sherwani, Khalida Bano, M. Harris Shoaib and Naheed Akhtar (2012). Docking Studies of Febuxostat by using MolDock Software. *Int. J. Biol. Biotech*. 9(4). 367-371.

- Asif Khan Sherwani, **Sadaf Naeem**, Uzma Asif, Khalida Bano, M. Harris Shoaib & Naheed Akhtar (2012). Docking Studies of Prasugrel by Using MolDock Software. *Pak. J. Biochem. Mol. Biol*. 45(3). 134-137

- **Sadaf Naeem**, Erum Shireen, Khalida Bano, Dave J. Barlow (2012). Ligand-based Screening of Chemical Constituents of Glycyrrhiza glabra in search of inhibitors of Xanthine Oxidase. Int. J. Biol. Biotech. 9(3). 257-262

- **Sadaf Naeem** (2012). Docking Studies of Cyclooxygenase 2 inhibitory activity of Flavonoids. *Int. J. Biol. Biotech*. 9(3). 273-281

- **Sadaf Naeem**, Peter Hylands and Dave Barlow (2012). Construction of an Indonesian Herbal Constituents Database (IHD) and its use in Random Forest Modelling in a search for inhibitors of aldose reductase. *J. Bioorg. Med.Chem.* 20:1251-1258. (Impact Factor: 2.978)

- Farhat Bano, Afshan Naz, **Sadaf Naeem**, Naheed Akhtar, and M.A.Haleem (2006). Computer Aided Conformational Analysis of Diazepam (7-Chloro-1,3-Dihydro-1-methyl-5-phenyl-2H-4-Benzodizapine-2-One). *Int.J.Biol.Biotech.* 3(1):145-149.

- Farhat Bano, **Sadaf Naeem**, Naheed Akhtar and M.A.Haleem. (2005) Computer Aided Conformational Analysis of Sulfonated Azo Dye Diammonium Orange G ($C_{16}H_{10}N_2O_7S_2(NH_4).4H_2O$. Pakistan Journal of Pharmaceutical Sciences 18(3): 66-70. (Impact Factor: 1.103)

- Naheed Akhtar, **Sadaf Naeem**, Waseem Ahmed and M.A.Haleem. (2004) Conformational Analysis of [Pd (dietyleneamine) (guanosine)] $(ClO_4)_2$. Hamdard Medicus XLVII(3): 133-135.

- **Sadaf Naeem**, Farhat Bano, Naheed Akhtar and M.A.Haleem. (2004) Conformational Analysis of 2-(α -D-Lyxofuranosyl) Maleimide. Pak. J. of Pharmacology 21(1): 31-36.

- Naheed Akhtar, **Sadaf Naeem**, Waseem Ahmed & M.A.Haleem.(2004) Rigid Body Refinement of Water Mediated Triple Helical Structure of β-D-1,3 Xylan from *Palmaria palmate (L) Kuntze (Rhodophyta).* Pakistan Journal of Botany 36(4): 745-750. (Impact Factor: 0.947)

ORAL PRESENTATION

- Oral presentation entitled "Identification of Novel Inhibitors of Cyclooxygenase 2 by Molecular Docking Studies at International Conference on Biochemistry and Molecular Biology, Venice, Italy 27-29 April 2016.

- Oral presentation entitled **"**Screening of the Phytochemicals from Traditional Indonesian Herbs for Aldose Reductase Inhibitors" at National Centre for proteomics Workshop on Bioinformatics Tools in Proteomics**,** December 28 - 29, 2011

- Oral presentation entitled "Virtual Screening of Traditional Indonesian Herbs for Aldose Reductase Inhibitors" at Postgraduate symposium, King's College London, July 23rd, 2010.

- Oral presentation on "Conformational analysis of antimuscarinic Azaprophen Hydrochloride (6-methyl-6-azabicyclo[3-2-1]octan-o1-2,2diphenylpropionate" at 8th Biennial National Conference of Pakistan Society for Biochemistry and Molecular Biology, March 7th – 9th,2005.

RESEARCH GRANTS AWARDED

- Grant for research project "Identification of herbal medicinal compounds as potential Xanthine Oxidase inhibitors by using Virtual Screening Methods" (2016) awarded by Hgher Education Commission (HEC) Pakistan, worth PKR 2.0 million.

- Grant for research project "Isolation of lipid-degrading microorganisms and their application for treatment of lipid-rich wastewater" (2016) awarded by Hgher Education Commission (HEC) Pakistan, worth PKR 4.0 million

- Grant for research project "Virtual screening of chemical constituents of *Acorus Calamus* in search of monoamine oxidase B inhibitors" (2014) awarded by the Dean, Faculty of Science, University of Karachi worth PKR. 100,000/-.

- Conducted a research project "*In-Silico* screening of Indonesian Herbal Constituents Database (IHD) in search of Inhibitors of Cyclooxygenase 2" (2013) supported by the research grant of the Dean, Faculty of Science, University of Karachi worth PKR. 125,000/-.

- Completed a research project "Conformational Analysis and Geometry Optimization of Prasugrel as P2Y12 Receptor Antagonist" (2012) supported by the research grant of the dean faculty of science, University of Karachi worth PKR. 80,000/-.

STUDENTS SUPERVISED

M.Phil/PhD Students enrolled

- Mr. Ahtesham ul Haq Naeem: "Effect of fluoroquinolones on hepatitis C subtype 3a infected interferon non-responders" (Supervisor).

- Ms. Uroosa Tariq: "Immuno-Evolution of HIV-1 Gag in Genetically Diverse Cohorts" (Supervisor).

- Ms. Samreen Afsar: "Isolation of lipid-degrading microorganisms and their application for the treatment of lipid-rich wastewater" (Co-supervisor).

MS / PhD Completed

- Saima Soomro: "Screening of Herbal Medicinal Compounds that can inhibit Hepatitis C Virus" (MS 2013; Co-supervisor)
- Ambreen Hafeez : "Photochemical and Computational Studies on the Interaction of Riboflavin and Cyanocobalamin" (PhD 2013; Co-supervisor)

B.S./M.Sc. Thesis

- Supervised several post graduate (B.S/M.Sc.) research students.

Dr. YASMEEN RASHID

Curriculum Vitae

E. mail :*yrashid2004@yahoo.com*
yasmeen.rashid@uok.edu.pk
Mobile No: 0092-*334-3670474*

SUMMARY OF Ph. D. THESIS:

Ph.D. Thesis Title: Isolation and Structure Prediction of *Neisseria Meningitidis* Proteins; a Meningitis-causing Bacterium

Summary:

Meningococcal meningitis is a worldwide-known infection of the meninges caused by *Neisseria meningitidis*. Epidemic of this lethal disease is one of the most overwhelming emergencies in the world. The genome of *N. meningitidis* contains 2158 protein coding regions. Nearly, half of the ORFs have been categorized into different functional classes. Sequence database searching of all *N. meningitidis* ORFs against proteins in PDB suggested the potential of obtaining useful structural information about 20% proteins. Sequence analysis of *N. meningitidis* hypothetical proteins using InterProScan and MPsrch resulted in the identification of 9 putative peptidases which belong to metalloproteases, serine proteases and aspartate proteases.

Elegant bioinformatics studies provided functional information regarding the ORF NMB1147 to be an aspartate protease with a protein fold similar to CapA protein. Molecular cloning and expression of synthetic NMB1147 gene was carried out in pQE80L expression system. The NMB1147 protein was expressed as inclusion bodies which were then solubilized in 8M urea followed by purification and refolding using nickel chelating affinity, ion exchange and Gel filtration chromatography.

Functional studies of HslVU protease-chaperone complex were also carried out for the identification of small molecules capable of activating HslV protease in the absence of its allosteric activator, HslU or HslU C-tail, using virtual screening of an in-house WADB compound library. HslV peptidase activation assays with the compounds having highest docking scores revealed their potential to allosterically activate HslV peptidase in a concentration dependent manner with ED50 less than that of HslU C-tail.

In search for attractive targets for antibacterial drug invention, structural bioinformatics studies of four *N. meningitidis* proteins were also carried out including three cell envelope proteins i.e. Mpl protein, AmpD protein and LD-carboxypeptidase, and one fatty acid biosynthesis protein i.e. FabF.

OBJECTIVES:

I want to serve the research group in a challenging and dynamic environment towards a successful career. I want to be an active contributor to a team of dedicated and ambitious people working on projects that involve blend of protein chemistry and structural biology and thereby enhance my knowledge and personality. I have a strong motivation to pursue career in frontier areas of Structural biology and Protein chemistry.

PERSONAL DATA:

Husband Name: Muhammad Aurongzeb
Children: two
Nationality: Pakistani
Gender: Female
Marital status: Married
Address: House No. S-31, Kashmir house, Tariq Bin Ziad, Malir Halt, Karachi, Pakistan.

EDUCATION:

- Ph.D., 2011
- M. Sc. (Biochemistry), 2004
- B. Sc. (Biochemistry, Chemistry & Microbiology), 2002
- F. Sc. (Pre-Med), 1999
- S.S.C. (Science), 1997

TECHNICAL EXPERTISE:

- Bioinformatics including Protein sequence analysis, Homology Modeling and Molecular Docking studies
- Molecular cloning, transformation, gene expression
- Protein and DNA electrophoresis
- FPLC, HPLC
- Gel Filtration, Ion Exchange and Affinity Chromatography
- Fluorescence spectroscopy
- UV/Visible and CD spectroscopy

CURRENT RESEARCH INTERESTS:

- Structural Bioinformatics
- Cloning, transformation, expression
- Protein purification and characterization

EXPERIENCE:

- Assistant Professor at DUHS, Karachi, Pakistan from June 2011 to December 2012
- Assistant Professor at University of Karachi, Karachi, Pakistan from December 2012 till present

CERTIFICATES:

- Oral presentation in 6^{th} International Symposium on Molecular Medicine and Drug Research (MMDR-6), 2017, ICCBS, University of Karachi
- Oral presentation in International conference in Translational Medicine; From Discovery to Healthcare, 2016, Ziauddin University.
- Participation in Protein Proteomics Society workshop, 2012, Department of Biochemistry, University of Karachi
- Participation in IUBMB Education workshop, 2012, Department of Biochemistry, University of Karachi

- Oral presentation in BIOCon-2012 conference, 2012, Department of Biochemistry, University of Karachi
- Presentation in Bioinformatics in Biomedical Sciences symposium-cum-workshop, 2012, DIMC, DUHS
- Poster presentation in Symposium on Omics Research: Road Map for Future, 2012, National Center for Proteomics, UoK.
- Participation in Grant writing workshop, 2011, Dow University of Health Sciences
- Participation and oral presentation in PSBMB Conference-2010, KIBGE, University of Karachi.
- Participation and oral presentation in 5th International Biotechnology Conference, 2009. University of Sindh (Jamshoro), Sindh, Pakistan.
- Participation as an organizer in HEC-ICCBS-BRITISH COUNCIL Workshop on Neutraceutical foods held on January 21, 2009
- Participation and Poster presentation in 11th International Symposium Natural Product Chemistry, 2008. HEJRIC, ICCBS, University of Karachi, Pakistan.
- Participation and Poster presentation in International Conference on Protein Chemistry, 2007. HEJRIC, ICCBS, University of Karachi, Pakistan.
- Participation and Poster presentation in 10th International Symposium Natural Product Chemistry, 2006. HEJRIC, ICCBS, University of Karachi, Pakistan.

IT SKILLS:

- WINDOWS
- LINUX

LANGUAGE SKILLS:

- Urdu
- English

PATENT/PUBLICATIONS:

- US Patent: Small molecule activators of HslV protease for development of novel antimicrobials. Patent No. US 20140371248 A1. Dated: December 18, 2014.

- Rashid Y, Kamran Azim M, Saify ZS, Khan KM, Khan R. Small molecule activators of proteasome-related HslV peptidase. Bioorg Med Chem Lett. 2012, 22(19):6089-94.

- Rashid Y, Azim MK. Comparative modeling of Anhydro-N-Acetylmuramyl-L-Ala Amidase from *Neisseria meningitidis*: implications for structure-function relationship. *Pak. J. Biochem. Mol. Biol.* 2011; 44(4): 153-155. ISSN: 1681-4525

- Rashid Y, Azim MK. Structural Bioinformatics of *Neisseria meningitidis* LD-carboxypeptidase: implications in substrate binding and specificity. *Protein J.* 2011; 30(8):558-65. ISSN 1572-3887.

- Rashid Y, Azim MK. Homology modeling of β-ketoacyl synthase-II from *Neisseria meningitidis*. *Pak. J. Biochem. Mol. Biol*. 2010; 43(2): 72-75. ISSN: 1681-4525

- Azim MK, Ali SR, Shoukat K, Iqbal A, Muhammad H and Rashid Y. Structural bioinformatics of *Vibrio cholera*: the causative agent of cholera. 2009. *Pak. J. Biochem. Mol. Biol*. 2009; 42(3): 106-113. ISSN: 1681-4525.

MUHAMMAD FARHAN KAMALI

Curriculum Vitae

NAME: MUHAMMAD FARHAN KAMALI

E-mail: farhankamali@uok.edu.pk
Date of Birth: 02nd, August 1984
Nationality: Pakistani
Address: Fatima Manzil, Sub-plot 11, Commercial Plot 8, Block 9, Yaseenabad, Karachi.
Contact No. 021-36337145, 03452209629

PRESENT DESIGNATION:
Assistant Professor
Department of Biochemistry,
University of Karachi, 75270, Pakistan

ACADEMIC QUALIFICATIONS

	Degree	Year	University	Subject
1.	Ph.D	2013	Karachi University	Biochemistry
2.	M. Sc	2006	Karachi University	Bio-Chemistry, Microbiology, Chemistry
3.	B. Sc (H)	2005	Karachi University	Biochemistry
4.	F. Sc	2002	Karachi Inter. Sc. Board	Pre-Medical
5.	H.S.S	2000	Karachi Metric Sc. Board	Science (Biology)

Ph.D. THESIS TITLE: NEUPHARMACOLOGICAL STUDIES ON INTERACTION OF STRESS AND APOMORPHINE IN CHRONIC MILD STRESS MODEL OF DEPRESSION.

Name of Supervisor: Prof. Dr. Darakshan Jabeen Haleem (Meritorious Professor, PCMD, ICCBS, UoK)

Experience/Employment History

S.#	Designation	Subject	Level/Class	Institution	Period	
					From	To
1	Assistant Professor	Biochemistry	B.Sc (Hons), M.Sc, M. Phil & Ph.D.	Department of Biochemistry, University of Karachi	26th June 2013	Till date
2	Lecturer	Biochemistry	B.Sc (Hons) & M.Sc	Department of Biochemistry, University of Karachi	03rd Decembe r2012	25th June 2013

3	Full-Time Cooperative Teacher	Biochemistry	B.Sc (Hons) & M.Sc	Department of Biochemistry, University of Karachi	5th January 2009	02nd December 2012
4	Research Assistant (National Internship Programme 2007)	Biochemistry	B.Sc (Hons) & M.Sc	Department of Biochemistry, University of Karachi	**16th August, 2007**	**04th May, 2008**
5	Lecturer (National Internship Programme 2007)	Biochemistry	MBBS	Jinnah Sindh Medical College & Dow Internship Medical College (DUHS)	**05th May, 2007**	**15th August, 2007**

Research experience

- Above 10 years of teaching/research experience.
- 20 research publications in international/ national journals of Biochemistry Neurochemistry, Neuropharmacology, Pharmacology and other life Sciences.
- Supervised over 15 M.Sc. thesis students and 5 Ph.D. Students is working under the supervision and expected to complete their works soon
- Command in techniques like HPLC-EC, Spectrophotometry and behavioral pharmacology techniques
- Worked as Research Assistant in HEC Awarded Research Project from May 2008 till December 2008.

Research grants:

- Awarded Karachi University DFS Research Grants (2014-2015)
- Awarded Karachi University DFS Research Grants (2016-2017)

Research Publications

1. **Muhammad Farhan**, Huma Ikram and Darakshan Jabeen Haleem. Chronic mild stress (CMS)-induced behavioral deficits were attenuated by fluoxetine. Pak. J. Biochem. Mol. Biol., 2013; 46(2): 65-69.
2. **Muhammad Farhan**, Huma Ikram, Sumera Kanwal and Darakshan Jabeen Haleem. Unpredictable chronic mild stress induced behavioral deficits: A comparative study in male and female rats. Pak. J. Pharm. Sci., Vol. 27, Issue No. 05, 2014
3. Sajjad Haider Naqvi, S. Faizan ul Hassan Naqvi, Iftikhar Haider Naqvi, **Muhammad Farhan**, Lu Yang, Rongqiao He (2014).Bovine serum albumin rescued SH-SY5Y cells from

nerurotoxic effects of lead. Pak. J. Biochrem. Mol. Biol., 2014; 47(3-4): 141-145

4. Sajjad Haider Naqvi, S. Faizan ul Hassan Naqvi, Iftikhar Haider Naqvi, , Lu Yang, **Muhammad Farhan**, Rongqiao He (2014). Treatment of bovine serum albumin with formaldehyde would result in cytotoxicity to SH-SY5Y cells. Pak. J. Biochrem. Mol. Biol., 2014; 47(1-2): 111-117.

5. Sajjad Haider Naqvi, S. Faizan ul Hassan Naqvi, Iftikhar Haider Naqvi, **Muhammad Farhan**, Tanveer Abbas, Lu Yang, Asma Gul (2014). Serum Hepcidin: Its correlation with serum ferritin, serum iron and hemoglobin in patients of iron deficiency anemia. Immunol, Endocr, Metab, Agents Med. Chem., 2014, Vol. 14, No. 2.

6. Darakshan Jabeen Haleem and **Muhammad Farhan**. Inhibition of Apomorphine-Induced Behavioral Sensitization In Rats Pretreated with Fluoxetine. **Behavioral Pharmacology** 2015. LWW-FBP-bp-13-150 Published.

7. Sumera Kanwal, Huma Ikram, **Muhammad Farhan,** Darakshan Jabeen Haleem (2015),. Apomorphine induced conditioned place preference and sensitization is greater in rats exposed to unpredictable chronic mild stress . Pak. J. Phatm. Sci., Vol. 28 No. 6, November 2015, pp. 1927-1932.

8. **Muhammad** Farhan, Hamna Rafiq and Hira Rafi (2015). Prevalence of Depression in Animal Model of High Fat Diet Induced Obesity. Journal of Pharmacy and Nutrition Sciences, 2015, Volume 5,No. 3, 208-215

9. Hira Rafi and **Muhammad Farhan** (2015). Dapoxetine Treatment Leads to Attenuation of Chronic Unpredictable Stress Induced Behavioral Deficits in Rats Model of Depression. Journal of Pharmacy and Nutrition Sciences, 2015, 5.

10. **Muhammad Farhan**, Darakshan Jabeen Haleem. Effects of chronic mild stress on apomorphine induced behavioral sensitization in different brain regions of rats in relation to serotonin changes (2015). Adv. Life Sci. 3(1). pp. 23-28.

11. Hira Awan, Sana Qadeer, **Muhammad Farhan** (2015). Behavioral consequence of repeated fluoxetine administration in tryptophan pretreated albino wistar rasts. Pak. J. Biochem, Mol. Biol. 2015: 48(2): 43-47

12. Hamna Rafiq and **Muhammad Farhan** (2015). High Fat Diet-Induced Obesity Stimulate Depressive Behavior in Rats. Current Psychopharmacology, 2015, 4, 125-132

13. **Muhammad Farhan**, Hamna Rafiq, Hira Rafi, Sajjad Haider Naqvi, Faizan ul Hassan Naqvi, Darakshan J. Haleem (2015). Anxiolytic profile of tryptophan as monitored following repeated administration in male rats. Pak. J. Biochem. Mol. Biol. 2015; 48(3): 74-78

14. **Muhammad** Farhan, Darakshan Jabeen Haleem (2016). Anxiolytic profile of fluoxetine as monitored following repeated administration in animals rat model of chronic mild stress. Saudi Pharmaceutical Journal. (2016) 24, 571–578

15. Hira Rafi and **Muhammad Farhan** (2016). Dapoxetine: An innovative approach in the therapeutic management in animal model of depression. Pakistan Journal of Pharmaceutical

Research Faculty of Pharmacy, Bahauddin Zakariya University, 2 (1) 15- 22.

16. **Muhammad Farhan** and Darakshan J. Haleem (2016). Attenuation of Unpredictable Chronic Mild Stress induced deficits in rats byApomorphine. Journal of Pakistan Medical Association. 66 (12), 1541-1546 .

AYESHA KHAN

Curriculum Vitae

Lecturer,
Department of Biochemistry
University of Karachi,
Karachi-75270, Pakistan

Mailing Address:
Aiwan e Liaquat Girls Hostel, Room#29 Karachi.
Phone: 03332798171
ayesha.khan@uok.edu.pk
ashkhanzada@hotmail.com

ACADEMIC QUALIFICATION

DEGREES	SUBJECT	YEAR OF ADDMISSION	YEAR OF PASSING	DIVISION /%/CGPA	INSTITUTE
PhD	Biochemistry	2009	2017	1st Div 79% CGPA: 3.6	University of Karachi
B.S (Hons)	Biochemistry	2004	2007	1st Div 76% CGPA: 3.65	University of Sindh
HSC	Premedical	2001	2003	1ST Div 65%	B.I.S.E Hyd
SSC	Science	1999	2000	1st Div 63%	B.I.S.E Hyd

RESEARCH EXPERIENCE

- Epidemiological research during B.S (Hons) programme Thesis entitled "Hazards of Manpuri Consumption in Hyderabad & Adjoining Areas".
- Experimental Work during the N.I.P Internship entitled "Cytotoxicity of Marine Macro Algae on brine shrimp."

WORK EXPERIENCE

- Lecturer at Department of Biochemistry, University of Karachi, Karachi, Pakistan.(Dec 2012-to date)
- Co-operative Lecturer at Department of Biochemistry, University of Karachi, Karachi, Pakistan.(January 2012-dec 2012)
- Research Associate on HEC funded project entitled "DNA associated proteins in Alzheimer's Disease" at Department of Biochemistry, University of Karachi, Karachi, Pakistan.

- Research Associate at Department of Biochemistry, University of Karachi under National Internship program.
- One-year teaching experience in Semi government school The Citizen Foundation.
- 2 months Internship & 2 month voluntarily worked at Pathological lab work at Liaquat University Hospital, Hyderabad.

PUBLICATIONS

1. Afshan Zeeshan Wasti, Nikhat Ahmed, Hajira Karim, Amna Ahmed and **Ayesha Khan**. 2016. Insilico Analysis of Post-Translational Modifications in DRD2 Receptor Protein in Schizophrenic Patients. *Current Proteomics* (Impact Factor: 0.69)

2. Shamim Mushtaq, Meraj Zehra, **Ayesha Khan**, Mehwish Ahmed, Rubina Ghani, Nikhat Ahmed. 2016. Biological Association and Expressions of NOS3 & SOD2 in Non-Diabetic Senile Cataractogenesis. *Advances in Enzyme Research*, 4, 87-97 DOI:10.4236/aer.2016.43009 (Impact Factor: 1.18)

3. **Ayesha Khan**, Nikhat Ahmed, Beena Hasan, Shamim Mushtaq. 2016. Co and Contra-Regulation of Glycosylated Proteins in Three Distinct Regions of Schizophrenics Brain. *Current Proteomics*, 2016, 13, 173-181 DOI: 10.2174/1570164613666160610095 038 (Impact Factor: 0.69)

4. Naseem Aslam Channa, **Ayesha Khan**. 2014. Hazards of Manpuri Chewing in Hyderabad & adjoining Areas, Pakistan. *Rawal Medical Journal*: Vol. 39. No. 2, April-June 2014

5. **Ayesha**, Hira, Viqar Sultana, Jehan Ara and Syed Ehteshamul-Haque. 2010. In Vitro Cytotoxicity Of Seaweeds From Karachi Coast On Brine Shrimp. *Pak. J. Bot.*, 42(5): 3555-3560, 2010. (Impact Factor: 1.1)

6. http://www.newhorizonsintranslationalmedicine.com/article/S2307-5023(16)30045-5/pdf

PRESENTATIONS

- Poster Presentation on "Proteomic analysis of Altered Expression in different Brain regions of Schizophrenics" at BioCon-2012 Biochemistry in the Post-Genomic Era, Organized by Department of Biochemistry University of Karachi. (Also got excellent poster award)
- Poster Presentation on "Proteomic Identification of Altered Expression in Schizophrenia" at AOHUPO 6th Congress, Beijing China, May 2012
- Oral presentation on "GIT Problems, Hypertension and Illiteracy are Positively Associated with Manpuri Consumption" at 1st International Conference of Chemistry and its role in Science (ICCRS-1) at Jinnah university for women Karachi, January 2011.
- Poster Presentation on "Hazards of Manpuri Consumption in Hyderabad & Adjoining Areas" in 47th Annual Conference held at Jinnah Postgraduate Medical Center Karachi, February 2010.

COMPUTER SKILLS

- Office Automation (MS word, excel, powerpoint)
- Operating softwares (Java stat 2- way contingency table analysis, 2D and 1D analysis software)
- Internet Browsing
- Statistical Analysis (Probit Analysis, P.value, Odds Ratio, Relative Risk Ratio, etc)

TECHNICAL SKILLS

- Immunoprecipitation and Co- Immunoprecipitation Techniques
- Protein Gel Electrophoresis (1DE, 2DE)
- Agarose Gel Electrophoresis
- Microbiological lab work
- Hematological lab work
- ELISA
- Spectrophotometeric Techniques
- Blood Chemistry Analyzer
- Chromatographic Techniques

CERTIFICATES

- Certificate of Participation and organizing PPS-AOHUPO Workshop "Quantitative Tools in Proteomics" Organized by Pakistan Proteomic Society and Department of Biochemistry, University of Karachi. (12-13 July 2012)
- Certificate of Participation and organizing Education Workshop conducted by International Union of Biochemistry and Molecular Biology (IUBMB). (10-11 July 2012)
- Certificate of Participation and organizing Conference "BioCon-2012 Biochemistry in the Post-Genomic Era" Organized by Department of Biochemistry, University of Karachi. (9-11 July 2012)
- Certificate of Participation and organizing Workshop "4th One Day Skill Development workshop" Organized by National Academy of Young Scientists, Pakistan Science Foundation and Department of Biochemistry, University of Karachi. (23 June 2012)
- Certificate of Participation in Symposium held at Jinnah Postgraduate Medical Center, Karachi, February 2010.
- Certificate of Participation for attending one day workshop on Biochemical Technique "ELISA", February 2010.

LANGUAGE

- Urdu, English, Sindhi (Beginner)

Beena Hasan

Curriculum Vitae

Bio Data	
Name :	Beena Hasan
Father Name :	Amir Hasan
D.O.B :	26th October 1983
NIC NO :	42201-9946385-6
Domicile :	Karachi, Sindh.
Martial Status :	Married
Adress:	
R-25 Row E, Block 2, Gulshan-e-Kaneez Fatima, Karachi, Pakistan.	Phone: 34982821,0323-2589108 E-mail: beena.hasan@uok.edu.pk

Summary of Qualification

- **Enrolled in M.S. /Ph.D.**

Successfully completed M.S. and pursuing Ph.D

Date : 2009 till date
Institution : The Karachi Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi
Topic : "Mass Spectrometric based Proteomics: Dynamic Interplay of proteins and their complexes in progression of Alzheimer's Disease"
Field of Study: Neuroproteomics
Supervisor : Professor Dr Nikhat Ahmed Siddiqui

- **Master of Science (M.Sc.)**

Date: 2005

Institution: University of Karachi
Subject: Biochemistry
Division: First (A Grade)

- **Bachelor of Science (B.Sc. Hons.)**

Date: 2002-2004
Institution: University of Karachi
Subject: Biochemistry
Division: First (A-Grade) **Secured 3rd Position**

- **Higher Secondary Certificate (H.S.C)**

Date : 2000-2001
Institution: Govt. Degree Science and Commerce College Gulshan-e-Iqbal.
Subject : Pre-Medical
Grade : A-Grade 72%

- **Secondary School Certificate (S.S.C)**

Date : 1998-1999
Institution: Ali Ali Secondary School.
Subject : Science
Grade: A-Grade 79.8%

Experience

- **Graduate and Post Graduate Teaching Experience**

2012 till date: Teaching as a lecturer in the Department of Biochemistry, University of Karachi.

2006- 2011: **Six years** teaching experience as a full time Lecturer in the Department of Biochemistry, Jinnah University for Women.

2006- 2008: **Two years** teaching experience as a Cooperative Lecturer in the Faculty of Pharmacy, Jinnah University for Women.

- **Research Experience**

2015 Served as a facilitator for Clinical proteomics workshop organized by Ziauddin University from Jan 10-11, 2015

2011: M.S. research successfully completed, Ph.D thesis; about to submit

2006: 3 months internship in SUPARCO from 27th April 2006 to 10th July 2006

2005: M.Sc. Thesis on "Protein expression profiling in schizophrenics on antipsychotic drugs" in the Department of Biochemistry, University of Karachi

- **Thesis Supervised**

2011: ***"Iron status and protein expression profiling in hypothyroid patients"***

"Comparative analysis of hematological indices and iron status in university going obese and non obese girls"

"Effect of Thyroid hormone imbalance on Serum Enzymes and Kidney Function"

"Hematological Indices and protein profiling in schizophrenia"

2010 *:* ***"Oxidative stress in Diabetes mellitus extending to Cardiovascular Disease"***

- **Additional Professional Activities**
- Organized Poster competition and lecture on **"World Osteoporosis Day"** in Oct 2013, UoK
- Organized **4th One Day workshop on Young Researcher's Skill Development** in collaboration with NAYS
- GAT Subject Test cleared with 97.32 percentile score in February 2012
- GAT General Test cleared with 92.6 percentile score in January 2008
- Member of Purchase Committee in Jinnah University for Women (2011)
- Departmental Incharge of Picnic from 2006-2011.
- Departmental Incharge of Students Week in 2007-2008.
- Departmental Incharge of Poster Model Competition held in 2007

- **Oral and Poster Presentations and Abstract Publications**
- Oral presentation in "Research and Innovation for Better Health" national conference

organized by Ziauddin University on Jan 10, 2015

- Poster Presentation on "A Proteomic Approach In Exploring Alzheimer's Disease" at IBRO-APRC Associate Workshop Of Neuroscience: From Basic Neuroscience To Advanced Applications won **FIRST PRIZE**
- Poster presentation on **"Differential expression of nuclear proteins"** in BioCon-2012 & won **Excellent Poster Award**
- "Epigenetics Interplay in Alzheimers Disease" in AOHUPO Conference, May 2010 in Australia
- "Alzheimer's Disease, Discovering post translational modifications in DNA associated proteins" in AOHUPO Conference, May 2012 China
- "Exploring the releam of nuclear world in Alzheimers Disease" in 10th Biennial Conference of PSBMB titled "Biomolecular Sciences in Development" & won **Second Prize** in Poster Competition.

- **Computer Skills**
- Three months certificate course of **Office Automation** completed from **Skill Development Council** during Feb –April, 2008.
- Basic Statistical Tools

- **Membership**
- Pakistan Proteomics Society (PPS)
- Pakistan Society for Biochemistry and Molecular Biology (PSBMB)
- National Academy of Young Scientists (NAYS)

- **Research Article Published**

Beena Hasan , Ayesha Khan, Christof Lenz, Abdul R. Asif , Nikhat Ahmed. Extending Insight in to AD pathology beyond expression analysis: role of a novel cortical protein complex. Submitted in Current Proteomics.

Erum Zafar, Ayesha Khan, Beena Hasan , Meraj Zehra, Nikhat Ahmed. Aberrant Protein S-Nitrosylation; A New Perspective In Hypertensive And Diabetic Hypertensive Disorders. Pakistan Journal of Medicine and Dentistry. 2016;5(4):48-51

Ayesha Khan, Nikhat Ahmed, Beena Hasan and Shamim Mushtaq. Co and Contra-Regulation of Glycosylated Proteins in Three Distinct Regions of Schizophrenics Brain. 2016;13(3):173-181

Afshan Zeeshan Wasti , Farah Jabeen, Beena Hassan. Biochemical and Enzymatic Profiling In Rheumatoid Arthritis: A Clinical Update. International Science and Investigation Journal ISSN:

2251-8576

Workshops, Seminars, Conferences and Courses attended	
April 2016	Attended workshop on Research Communication Skills in DHA SUFFA University
Dec 2015	First International Conference on Life Sciences "Emerging trends in Biological Sciences and Genomics"
Feb 2015	Workshop on Research Communication skills for scientific writing and presentation organized by KIBGE
Feb 2015	Endnote: The citation management software
Nov 2014	Attended Symposium on World Diabetes Day: Role of Ethnopharmacology in metabolic disorders
Sept-Oct 2013	Attended IBRO-APRC Associate Workshop Of Neuroscience: From Basic Neuroscience To Advanced Applications
Oct 2012	Fourth ICLS-KIBGE International Conference on Science, Technology and Engineering: Innovative, yet responsible
Sept 2012	Workshop on ' Essentials of Manuscript writing held at KIBGE
July 2012	Organized and attended IUBMB Education Workshop on Biochemistry and Molecular Biology Education
July 2012	Organized and attended BioCon-2012 "Biochemistry on the Post Genomic Era
Dec 2011	Attended 2nd International Conference on Diabetes organized by DOW

	University of Health Sciences
Nov 2011:	Attended First International Biosafety Conference on " Building National Biosafety and Global Ties"
Mar 2011:	Attended Symposium cum workshop on "Tools in Biomedical Research"
Jan 2011:	Attended a conference at Jinnah University for Women titled "1st International Conference of Chemistry and its role in Science (ICCRS)"
Dec 2010:	Participated in 10th Biennial Conference of PSBMB titled "Biomolecular Sciences in Development" & won **Second Prize** in Poster Competition.
Nov 2010:	Participated in seminar & workshop on PCR titled "qREAL TIME PCR and direct DNA techniques" in Baqai Medical University.
Mar 2009:	Attended one day workshop on "Research inline with HEC guideline"
Mar 2007:	Attended US-Pakistan International Workshop on "Molecular Biology: Tool for the Future"
Feb 2007:	Attended First National Pakistan Proteomics Society Workshop titled "Roadmap to Proteome Research" Life Sciences HEC workshop".
Jul-Sept 2002:	Attended English Language Proficiency course in Karachi University**.**

Survey's Results