



TO THE MAGNIFICENT RECTOR  
OF THE UNIVERSITY OF MILAN CODE ID: 6981

The undersigned requests to be admitted to participate in the public selection, based on qualifications and exams, for the awarding of a research grant at the Dipartimento di Scienze Cliniche e di Comunità dell'Università degli Studi di Milano Scientific Director: **Prof. MOTTA Irene**

**Amna Rashid Tariq**

## CURRICULUM VITAE

### PERSONAL INFORMATION

<b>Surname</b>	Tariq
<b>Name</b>	Amna Rashid

### CURRENT EMPLOYMENT

<b>Assignment</b>	<b>Structure</b>
Post doc fellow	Seoul National University Hospital, Biomedical Research Institute, Seoul, Korea.

### EDUCATION AND TRAINING

Title	Course of study	University	year of obtaining the title
Master's Degree or equivalent	Zoology	Govt. College University Lahore, Punjab, Pakistan.	2004
M.Phil course work and research	Animal Sciences: endocrinology	Quaid-i-Azam University, Islamabad, Islamabad, Pakistan.	2007
PhD	Animal Sciences: endocrinology	Quaid-i-Azam University, Islamabad, Islamabad, Pakistan.	2014
Master			
Medical Specialization Diploma			
European Specialization Diploma			
Other	A part of the PhD	Monash University	2010



	research project work carried out in Australia	Australia	
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## REGISTRATION TO PROFESSIONAL ORDERS

Registration date	Order	City

## FOREIGN LANGUAGES KNOWN

languages	level of knowledge
English	Proficient reading, writing, spoken and understanding

## AWARDS, RECOGNITIONS AND SCHOLARSHIPS

year	Award Description
(20-08-2007) to (20-08-2012)	Indigenous Ph.D. Fellowship awarded by Higher Education Commission (HEC) of Pakistan: fellowship for M.Phil leading to PhD studies.
(5-12-2009 to 30-05-2010)	Award of scholarship under International Research Support Initiative Program by Higher Education Commission of Pakistan for Monash University Australia for 6 months
11-15 July, 2010	Young Investigator Travel Award to attend 7 <sup>th</sup> International Congress of Neuroendocrinology, held at University of Rouen, France.

## TRAINING OR RESEARCH ACTIVITIES

<b>Description of the activity</b> <b>Postdoc:</b> I have completed my 1 year <b>postdoc (cell biology: August 2023)</b> in Seoul National University Hospital Korea. I am passionate to bring my expertise and skills to your efficient team. I availed my <b>PhD (Animal Sciences: endocrinology, 2014)</b> , in Quaid-i- Azam University Islamabad, Pakistan and I did part of my PhD research work in Monash University Australia. I secured my <b>M.Sc. in zoology</b> (research in microbiology).
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- **Extensive research experience:** During my **postdoc**, I worked on the therapeutic effect of a drug (gemigliptin) **on stem cells** i.e., endothelial progenitor cells (EPCs) isolated from peripheral blood samples of diabetic patients.
- **Scientific track record+ Experience in specific molecular and cell biology techniques:** I **isolated and cultured** the EPCs. I characterized morphological markers of EPC cells (CD34, CD44, CD31, KDR) by using **multiple direct fluorescence immunocytochemistry, western blot** and **Flow cytometric analysis**. I checked the phenotypic characteristics of EPCs by Dil-AcLDL and ulexlectin uptake. The effect of various drug doses on EPC cells (in vitro) was monitored by using **western blot** and viability assays. During **cell culture**, I worked regularly with cell counting, culture, sub culture, cryopreservation and recovery of cells in liquid nitrogen. I have **two first author articles** from this postdoc, **one of which is a review**.
- My **M.Phil.** Project was based on finding the expression of a **peptide** (metastin) and its receptor (GPR54: G protein coupled receptor) in the reproductive tissue of rhesus monkey. To achieve this goal, **single indirect fluorescence Immunohistochemistry with confocal microscopy** was employed.
- The preliminary data obtained from my MPhil studies lead to the development of my PhD project. During my **PhD research**, I deciphered the role of metastin and its receptor GPR54 signaling in the reproductive tissue of rhesus monkey using **tissue homogenates, multiple fluorescence Immunohistochemistry (indirect) and RTPCR**. For expression analysis, I used **multiple fluorescence Immunohistochemistry (indirect) and RTPCR** for metastin and GPR54. To explore a direct effect of metastin on tissues, tissues were **biopsied** from rhesus monkeys, **tissue homogenates** were prepared and the concentration of inhibin, metastin and testosterone was analyzed using **ELISA**. I have a great experience of learning and working of different immunohistochemistry and immunocytochemistry techniques, **histology, tissue embedding in paraffin, section cutting, fluorescence confocal microscopy** and **image analysis** in the Monash University Australia during my PhD.
- **Organization and management of the project:** In my PhD project, I designed, developed and optimized my research project, and designed technique protocols through an extensive literature review. I am dedicated to learn new techniques for my career and lab development. I am motivated to work in interdisciplinary environment.
- **My expertise relevance to luspatercept Effect on erythropoiesis, in transfusion-dependent thalassemia project:** My **cell biology** experience in my postdoc where I sought for the effect of a therapeutic chemical on cell morphology, number and viability and my



PhD experience with endocrinology coupled with theoretical course work knowledge on thalassemia establishes my interest and supports me as a strong candidate researcher for the project. While during my teaching phase, as an assistant Prof. I got chance to teach different physiology courses to postgraduate medical students as well further enhancing my knowledge of blood cells production.

- In my **M.Sc** research project, I **isolated and cultured the gram positive bacteria** using physical and various bio-chemical methods.
- **Writing of scientific articles and journals:** I have two first authored articles from PhD, I have five first authored articles and a total of 8 articles in peer reviewed journals.
- **Ability to design experiments independently:** I inculcated new lab techniques into projects through regular extensive literature review. I maintained lab equipment, discussed the research results with my supervisor and lab team regularly. For my project experiments during my PhD, I managed chemical stocks, I ordered chemicals to companies, kept track of my orders regularly.
- **Strong collaborative, communicative nature.** I have research experiences in two international labs (**as shown in my publications**) which represents that I am capable to work with strong collaborative nature and communication internationally. **I worked while always taking notes from mentors, keeping them well informed.** I trained the undergraduate student and helped other lab fellows during my PhD and postdoc in various lab techniques. The names of my lab fellows can be found in my publications both from PhD and postdoc which shows that I worked as a team in my projects.
- **Presentation of project reports at meetings and seminars:** I also have experience of presenting results in conferences.
- **Dedication.** I am dedicated to my duties performing regularly and on time. I performed my PhD and postdoc projects with utmost dedication to research. My research journey up till now represents that I am moving forward in my research passion.
- **Grant applications and paper preparation.** My PhD was funded by an indigenous competitive fellowship in Pakistan which indicates that I am capable of developing applications for grants.

## PROJECT ACTIVITY

Year	Project
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2022-2023	<p>Postdoc project:</p> <ul style="list-style-type: none"><li>• During my <b>postdoc</b>, I worked on the therapeutic effect of a drug (gemigliptin) <b>on stem cells</b> i.e., endothelial progenitor cells (EPCs) isolated from peripheral blood samples of diabetic patients.</li><li>• I analyzed In vitro effect of gemigliptin on EPC number and function along with an effective treatment dose of gemigliptin. EPCs were isolated, cultured and phenotypically characterized using Dil- AcLDL and ulex-lectin fluorescence staining. EPCs were then treated with different doses of gemigliptin and their viability analyzed with viability assay using water-soluble tetrazolium salt (WST-1), by Annexin V and Propidium Iodide (PI) staining, senescence associated beta-galactosidase (SA-<math>\beta</math>-gal) staining, western blot and Flow cytometric analysis of apoptotic signals.</li><li>• I <b>isolated and cultured</b> the EPCs, I characterized morphological markers of EPC cells (CD34, CD44, CD31, KDR) by using <b>multiple direct fluorescence immunocytochemistry</b>.</li><li>• I checked the phenotypic characteristics of EPCs by Dil-AcLDL and ulexlectin uptake.</li><li>• To measure an effect of gemigliptin and evaluation of characteristic effective dose, EPCs were incubated with different doses of gemigliptin</li><li>• Cell viability was measured by cell proliferation using viability assays.</li><li>• The effect of various drug doses on EPC cells (in vitro) was monitored by using <b>western blot</b> and.</li><li>• During <b>cell culture</b>, I worked regularly with cell counting, culture, sub culture, cryopreservation and recovery of cells in liquid nitrogen.</li><li>• I used Flow cytometric analysis to measure the percentage of apoptotic cells</li><li>• I have <b>two first author articles from this postdoc, one of which is a review</b>.</li></ul>
2007-2013	<p><b>PhD project</b></p> <ul style="list-style-type: none"><li>• The preliminary data obtained from my MPhil studies lead to the development of my PhD project.</li><li>• During my <b>PhD research</b>, I deciphered the role of a neuropeptide (metastin) and its receptor (GPR54: G protein coupled receptor) signaling in the reproductive tissue of rhesus monkey using <b>multiple fluorescence Immunohistochemistry (indirect) and RTPCR</b>. I used primary and secondary antibodies for metastin and</li></ul>



	<p>GPR54 to observe its co-localization with biomarkers of sperm cells in testis tissue. A direct effect of metastin on <b>tissue homogenates</b> was observed and the concentration of inhibin, metastin and testosterone was analyzed using <b>ELISA</b> for each hormone. I have a great experience of learning and working of different immunohistochemistry and immunocytochemistry techniques, <b>histology, tissue embedding in paraffin, section cutting, fluorescence confocal microscopy</b> and <b>image analysis</b> in the lab of Prof. Iain Clarke, Monash University Australia during my PhD. I am immensely motivated to learn new techniques.</p>
2006-2007	<p><b>M.Phil. Research</b></p> <ul style="list-style-type: none"><li>My <b>M.Phil.</b> Project was based on finding the expression of a neuropeptide (metastin) in the reproductive tissue of rhesus monkey. To achieve this <b>single indirect fluorescence Immunohistochemistry was employed.</b></li></ul>
2003-2004	<p><b>M.Sc research</b></p> <ul style="list-style-type: none"><li>In my <b>M.Sc</b> research project, I isolated and cultured the gram positive bacteria using physical and bio-chemical methods.</li></ul>

## PATENT OWNERSHIP

Patent
no

## CONGRESSES, CONFERENCES AND SEMINARS

Date	Title	Site
11-15 July, 2010	Expression of kisspeptin and its receptor in rhesus monkey testis, 7th Neuroendocrinology Congress, Poster presentation.	University of Rouen, Rouen, France.
13-15 December 2018	Conference SAAP and PPS 16 biennial conference	University College of Medicine and Dentistry, University of Lahore
4 August, 2016	National Symposium on 'Potential impact of genetic testing and	Department of Molecular Biology, Virtual University of Pakistan, Lahore.



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## PUBLICATIONS

### Books

### Journal Articles

Lee M, Tariq AR (Lee and Tariq are co-First authors), Kim M. Gemigliptin, a potent selective dipeptidyl peptidase 4 inhibitor, protects endothelial progenitor cells by oxidative stress via caspase-3 dependent pathway. Biochem Biophys Rep. 2024 Mar 2;38:101673. doi: 0.1016/j.bbrep.2024.101673. PMID: 38444735; PMCID: PMC10914559.

Tariq AR, Lee M, Kim M. Endothelial Progenitor Cells: A Brief Update. Int J Stem Cells. 2023 Nov 30. doi: 10.15283/ijsc23106. Epub ahead of print. PMID: 38030386.

Sajid F, Anwar H, Rasul A, Imran A, Malik SA, Zafar S, Maqbool J, Akram R, Ijaz F, Tariq AR, Hussain G. Indian ginseng (N.Hexane and Chloroform extracts) offers ameliorating effects on muscle functions restoration in a mouse model of peripheral nerve injury. International Journal of Biosciences. 2021; 18: 231-240. DOI: <http://dx.doi.org/10.12692/ijb/18.5.231-240>.

Rehman A, Jawed S, Tariq AR. Link between Autoimmune Hypothyroidism and Polycystic Ovary Syndrome. The Professional Medical Journal. 2020; 27:1804-1808. DOI: <https://doi.org/10.29309/TPMJ/2020.27.09.3750>

Sheik h ZI, Tariq AR, Shoaib A, Mahmood S. Comparative study of acylated ghrelin levels in obese diabetes mellitus type 2 and lean diabetes mellitus type 2 female aged 30-45. The Professional Medical Journal. 2020; 27(11):000-000. DOI: <https://doi.org/10.29309/TPMJ/2020.27.11.4390>

Tariq AR, Rahman Z. Neuropeptidergic regulation of pancreatic hormones, a therapeutic approach for type 2 diabetes mellitus. Science Letters. 2018. 6: 23-27. [http://thesciencepublishers.com/science\\_letters/files/v6i1-5-132017029-SL.pdf](http://thesciencepublishers.com/science_letters/files/v6i1-5-132017029-SL.pdf).

Tariq AR, Shabab M. Effect of kisspeptin challenge on testosterone and inhibin secretion from in vitro testicular tissue of adult male rhesus monkey (Macaca mulatta). Andrologia. 2017. 49(1). DOI: 10.1111/and.12590.





**Tariq AR**, M Shahab, IJ Clarke, A Pereira, JT Smith, S Khan, J Sultan, S Javed, T Anwar. Kiss1 and Kiss1 receptor expression in the rhesus monkey testis: a possible local regulator of testicular function. Central European Journal of Biology. 2013. 8: 968-974. <https://doi.org/10.2478/s11535-013-0219-4>

#### Conference Proceedings

##### Poster presentation

Expression of kisspeptin and its receptor in rhesus monkey testis, 7th Neuroendocrinology Congress, Poster presentation, University of Rouen, Rouen, France. 11-15 July, 2010.

[title, structure, city, year]

Conference SAAP and PPS 16 biennial conference, University College of Medicine and Dentistry, University of Lahore, 13-15 December 2018.

[title, structure, city, year]

National Symposium on 'Potential impact of genetic testing and counseling', Department of Molecular Biology, Virtual University of Pakistan, Lahore. 4 August, 2016.

#### MORE INFORMATION

##### **Research Supervision and training**

- I trained research techniques to my junior lab fellow during my post doc at Seoul National University Hospital, Korea.

**Course taught as Assistant Prof.:** Neuroscience, Advances in neuroscience, Physiology, Sports science.

**M.Phil. and Ph.D. courses specifically relevant to the advertised project:** Neurobiology, Advances in Neurobiology, Advances in molecular biology, Protein and Polypeptide hormones, Advances in Animal Physiology, Techniques in Biotechnology, Advances in endocrinology, Advances in developmental biology, Advances in molecular genetics, Recombinant DNA technology.

##### **Technical Skills**

- Cell biology:** Multiple Fluorescence immunocytochemistry, immunohistochemistry, Flow cytometric analysis, Stem Cell Culture, Cell counting, cryopreservation of cells in liquid nitrogen and recovery.





- **Microscopy and Imaging:** Fluorescence Imaging, confocal microscopy, inverted microscopy, light microscopy
- **Molecular Biology:** Western blot, Reverse Transcriptase PCR (RT-PCR)
- **Bio-chemical techniques:** Immuno-assays (ELISA), viability assays
- Bacterial culture, isolation, bio-chemical characterization (motility test, catalase test, oxidase test, urease test, mixed acid fermentation, Macconkey agar test, citrate test, nitrate reduction test, voges proskeur test, lactose test, glucose test, indole test) . Growth of bacterial isolates at different temperatures, Gram positive bacteria cell culture
- histology, tissue embedding in paraffin, section cutting, tissue culture, tissue homogenate
- **Computer skills:** Microsoft Office (word, PowerPoint, excel)
- **Graphics:** Adobe Photoshop
- Statistical elaboration: Prism- GraphPad, Image J

The declarations made in this curriculum vitae are to be considered as having been released pursuant to articles 46 and 47 of Presidential Decree no. 445/2000.

This curriculum does not contain sensitive data and judicial data as per art. 4, paragraph 1, letters d) and e) of Legislative Decree 30.6.2003 n. 196.

WE REMEMBER that the curricula **WILL BE MADE PUBLIC on the University website** and therefore please do not enter sensitive and personal data. This model is already pre-built to meet the need for publication without sensitive data.

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Place and date: Lahore, Pakistan, 11.19.2024