

Mohammad Rafiqul Islam

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University of Dundee
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RESEARCH INTERESTS

My current research focused on cell biology and molecular related studies investigating the cellular signalling mechanisms in oral cancer metastasis and cleft lip/palate development. I am also interested in Dental Stem Cell Biology and tissue regeneration.

EDUCATION

2011-2015

PhD in Cancer Biology

University of Dundee, Scotland, UK

Supervised by Dr Ian R Ellis

Thesis Title: Role of VEGF-induced PI3K/Akt signalling pathways in oral cancer cell migration (Funded by Anonymous Trust)

Projects: Investigating the role of VEGF-induced Akt signalling mechanisms in oral cancer cell migration, a crucial step in metastasis. Studying the role of activated Akt in oral cancer diagnosis and patient survival. Both projects were designed to demonstrate Akt as cancer biomarker and as potential therapeutic target in metastasis.

2007-2008

MSc. in Biotechnology

University of Abertay Dundee, Scotland, UK

Dissertation Project: Role of Migration Stimulating Factor (MSF) in Oral Cancer (Supervisor: Dr Ana Schor, University of Dundee)

2000-2005

Bachelor of Pharmacy (Hons) (First Class)

Jahangirnagar University, Dhaka, Bangladesh

Major modules studied: Pharmacology, Medicinal chemistry, Pharmaceutics, Toxicology, and Pharmaceutical Analysis

WORK EXPERIENCE

Aug 2018-Present **Technical Supervisor** University of Dundee

- Demonstrated experiments and supervised practicals for undergraduate and post-graduate students of up to 60 students in the School of Dentistry
- Training of novel techniques to postgraduate research students and technicians
- Day to day technical supervision of the project students in the lab
- Supervising postgraduate research projects
- Managing a small team of technicians working in the various laboratories e.g. tissue culture, biochemistry, histology, microbiology and hard tissue.

Jun 2016-Aug 2018 **Lecturer** University of Dundee

- Lecturing Pharmacology and Cell Biology for Dental undergraduates and Cell Biology for MSc Oral Biology and Oral Cancer courses
- Supervised 2 PhDs, 3 Postgraduates and 4 summer internship research projects
- Demonstrated practicals for post graduates students
- Involved in standard settings and assessment of the exam papers and postgraduate dissertations
- Acted as a judge to Dental School Post-graduate Research Symposium presentations
- Examination invigilation ensuring correct procedures and processes were followed

Jan 2006-Aug 2007 **Production Officer** Incepta Pharmaceuticals Ltd, Bangladesh

- Managed a medium sized (15) team to manufacture quality-based bio-pharmaceutical products
- Monitored individual, team and machine performance
- Controlled the flow of work to meet the deadline- from checking and managing the product specifications to overseeing the work of the staff
- Developed SOPs and followed cGMP.

PUBLICATIONS

- Ghoshal A, Ahmed H, Ellis I, Jones S, Islam M., (2019) New Devil in Oral Cancer! Role of CAFs in Metastasis, Cancer Res (Manuscript Submitted)
- Islam MR, Shalgam B, Alghamdi A, Sriramula P, Jones S, Ellis I., (2018) Is it all just Akt-you'd be SMAD to believe it? Role of TGFβ1 in oral cancer metastasis, Science Repository (DOBCR); 2(1): 2-10.
- Islam MR, Shradhdha M, Hyder E, Jones S, Ellis I (2017) The motogenic effect of EGF and TGFα on the migration of tumour cells from the oral region: a role for EMT in cancer and a route for translation into the clinic, Translational Research in Oral Oncology, 2: 2057178X17698481
- Islam MR, Jones SJ, Macluskey M, Ellis IR., (2014) Is there a pAkt between VEGF and oral cancer cell migration? Cellular Signalling, 26(6), 1294-1306.

- Islam MR, Ellis IR, Cochrane L, Macluskey M, Jones SJ., (2014) Activation of Akt at T308 and S473 in alcohol, tobacco and HPV-induced HNSCC: Is there evidence to support a prognostic or diagnostic role? *Experimental Hematology and Oncology*; 3(1):25. doi: 10.1186/2162-3619-3-25.
- Tummala H, Khalil HS, Islam MR, Jones S, Ellis IR, D'Ascanio I, Zhelev N, Lester D, (2013) The alternate GNB3 splice variant, Gβ3s, exhibits an altered signalling response to EGF stimulation, which leads to enhanced cell migration. *BioDiscovery* 2013; 9: 3; DOI: 10.7750/BioDiscovery.2013.9.3
- Ellis IR, Islam MR, Aljorani L, Jones SJ. (2012) Fibronectin: the N-terminal region and its role in cell migration- implications for disease and healing. In Beattie, J., (ed). *Fibronectin: Current Concepts in Structure, Function and Pathology*. NY, Nova Science Publishers, pp. 35-69.
- Islam M, Alkhadar H, Paterson M, Macluskey M, Jones S, Mossey P, Ellis I., (2011) VEGF and Oral cancer: *Ex-vivo* and *In-vitro* studies, *Eur J Cancer*; 47. doi:10.1016/S0959-8049(11)72235-3.
- Schor AM, Perrier S, Woolston AM, Jones SJ, Ellis IR, Islam MR, Kazmi S, Purdie C, Thompson AM, and Schor SL., (2010), Expression of migration stimulating factor in breast tissues and its clinical significance, *Breast Cancer Res*, 12(Suppl 1):, P37.

Articles: How to maintain live cells on a microscope stage (2016), Bitesize bio.

<http://bitesizebio.com/30897/maintain-live-cells-microscope-stage/>

TECHNICAL COMPETENCY

Cell biology: Cell culture (normal and cancer), developing 3D spheroids and *in vitro* TME model, cellular viability and cytotoxic assay, cellular imaging and live cell analysis (inverted and confocal microscopy), *in vitro* cell migration and invasion assay (modified Boyden chamber, wound healing, 3D collagen gel, live cell chemotaxis and video microscopy assay).

Molecular Biology: Bacterial transfection, viral transduction, PCR, gene cloning, *in vitro* mutagenesis.

Biochemistry: SDS-PAGE & western blot, ELISA, immunohistochemistry, immunofluorescence. Immunoprecipitation, UV spectroscopy, gel filtration and affinity chromatography.

Bioinformatics tool: NCBI BLAST, OMIM, ORF finder, Primer BLAST, FASTA, ClustalW

Data processing and analysis ImageJ plugins, Metamorph, CellSense, Image lab, SPSS and Graphpad Prism.

CONFERENCES ATTENDED

- International Association for Dental Research conference, Vancouver, Canada, 2019
- 9th NCRI Cancer Conference, Liverpool, UK, 2013
- INSPIRE/DRAMS research event on oral cancer, Dundee, UK, 2013
- EACR/IACR joint conference on tumour microenvironment, Dublin, Ireland, 2012
- Dundee/Belfast Cancer Centre's joint cancer symposium, Dundee, UK, 2011
- TOR, PI3K and Akt-20 Years On, Basel, Switzerland, 2010

TRAINING/COURSES ATTENDED

- Harassment Adviser, University of Dundee, 2019
- Scottish Mental Health First Aider, NHS/University Dundee, 2018
- Management training (HR, developing people, management today), University of Dundee, 2018-19
- Science communication, Dundee Science Centre, 2016
- Basic and intermediate courses on biostatistics, University of Dundee, 2013
- Live cell chemotaxis and video microscopy, IBIDI GmbH, Munich, Germany, 2012
- Effective project management, University of Dundee, 2012
- Enhancing presentation skills, University of Dundee, 2012

PROFESSIONAL MEMBERSHIPS

- Associate Fellow, UK Higher Education Academy
- Member, International Association for Dental Research
- Member, European Association for Cancer Research
- Member, British Society for Cell Biology
- Registered Pharmacist, Bangladesh Pharmacy Council

AWARDS/SCHOLARSHIP

- Tattersall grant, £8000, 2017-18
- Anonymous trust grant, £10000, 2014-15
- BSCB/Honorfell trust travel grant, £500, 2013 and 2014
- Scottish Overseas Research Student Award Scheme (PhD Studentship), 2010-2014

REFERENCES

Dr. Ian R Ellis, Unit of Cell and Molecular Biology, Dundee Dental School, University of Dundee, Dundee, DD1 4HN, UK, Phone: +441382 381618, Email: i.r.ellis@dundee.ac.uk

Dr. Sarah J Jones, Unit of Cell and Molecular Biology, Dundee Dental School, University of Dundee, Dundee, DD1 4HN, UK, Phone: +441382 381632, Email: s.j.jones@dundee.ac.uk

Jacqui Cox, Unit of Cell and Molecular Biology, Dundee Dental School, University of Dundee, Dundee, DD1 4HN, UK, Phone: +441382 381612, Email: j.cox@dundee.ac.uk

