

## Mohammed A. Alsaweed, Ph.D.

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Student Affairs  
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College of Applied Medical Sciences  
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### RESEARCH INTERESTS

MicroRNAs are small non-coding RNAs which known as regulators of gene expression at post-transcriptional level. These molecules have vital roles in different developmental and protection roles in the human body including cell differentiation and development of immune system. Nowadays, studying the profiling and functions of microRNAs are one of the important scientific trends in the world to understand the mechanisms of the normal and abnormal tissues and organs mechanisms. Further and interestingly, human milk is well known as the ideal food for infant providing energy and materials for somatic growth. Human milk is rich in microRNAs, which contribute in different milk nutritional constituents biosynthesis, and may integrate in infant's intestinal cells and play cortical roles in development and growth. I primarily investigate the roles/functions of different microRNA species in several of tissues and organs, especially in mammary gland and human milk.

### EDUCATION

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| 2012-2016 | Ph.D. in Molecular Biology, The University of Western Australia, Australia. Thesis Title: Characterisation of the miRNA content of human milk: Novel molecules with multifunctional significance for the mother and the infant. |
| 2009-2010 | Master of Biomedical Science (Major: Molecular Biotechnology), Curtin University, Australia.  |
| 2006-2007 | Medical Laboratory Internship for one year, King Fahad Specialist Hospital, Saudi Arabia.   |

2002-2006 Bachelor of Applied Medical Science (Major: Medical Microbiology), Qassim University, Saudi Arabia.

## **PROFESSIONAL EXPERIENCE**

- Oct 2017 – present Vice Dean for Academic Affairs, College of Applied Medical Sciences, Majmaah University, Saudi Arabia.
- Oct 2017 – present Vice Dean for Students Affairs, College of Applied Medical Sciences, Majmaah University, Saudi Arabia.
- May 2017 – Oct 2017 Establisher and Head of Master of Biomedical Engineering Program, College of Applied Medical Sciences, Majmaah University, Saudi Arabia.
- Aug 2016 – Oct 2017 Head of Medical Equipment Technology Department, College of Applied Medical Sciences, Majmaah University, Saudi Arabia.
- April 2016 - present Assistant Professor of Cellular and Molecular Biology, College of Applied Medical Sciences, Majmaah University, Saudi Arabia
- Aug 2011 - Feb 2012 Lecturer of Molecular Biology, College of Applied Medical Sciences, Majmaah University, Saudi Arabia.
- Dec 2010 - Aug2011 Scientific Researcher, The Joint Centre for Genomics, King Abdulaziz City for Science and Technology (KACST), Riyadh, Saudi Arabia.

## **PUBLICATIONS**

### Peer-Reviewed: Journal Articles

1. **Alsaweed M**, Hepworth AR, Lefevre C, Hartmann PE, Geddes DT, Hassiotou F (2015). Human milk microRNA and total RNA differ depending on milk fractionation. *Journal of Cellular Biochemistry* 116:2397-2407.
2. **Alsaweed M**, Hartmann PE, Geddes DT, and Kakulas F (2015). MicroRNAs in Breastmilk and the lactating breast: Potential immunoprotectors and developmental regulators for the infant and the mother. *International Journal of Environmental Research and Public Health* 12:13981-14020.
3. **Alsaweed M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). Human milk miRNAs primarily originate from the mammary gland resulting in unique miRNA profiles of fractionated milk. *Scientific Reports* 6:20680.

4. **Alsaweid M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). Human milk cells and lipids conserve numerous known and novel miRNAs, some of which are differentially expressed during lactation. *PLOS ONE*.
5. **Alsaweid M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). Human milk cells contain numerous known and novel miRNAs that regulate multiple physiological processes and may change in response to milk removal. *International Journal of molecular Sciences*.
6. **Alsaweid M**, Badsha M, Tat-Lai C, Geddes DT, Kakulas F (2016). MicroRNA expression profiles of human milk cell and lipid fractions in response to naturally occurring infection during breastfeeding period. *Genes & Immunity (Under Review)*.
7. **Alsaweid M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). miRNA normalisation and analysis of human milk and maternal blood using OpenArray Panel System. *Scientific Data (Under Preparation)*.
8. **Alsaweid M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). Computational identification of microRNAs expression in human milk using Next Generation Sequencing. *Genomics Data (Under Preparation)*.

### Dataset publications

1. **Alsaweid M**, M. *et al.* Gene Expression Omnibus (GEO) GSE66358 (February, 2015).
2. **Alsaweid M**, M. *et al.* Gene Expression Omnibus (GEO) GSE71098 (July, 2015).
3. **Alsaweid M**, M. *et al.* Gene Expression Omnibus (GEO) GSE75726 (December, 2015).
4. **Alsaweid M**, M. *et al.* Gene Expression Omnibus (GEO) GSE80546(April, 2016).
5. **Alsaweid M**, M. *et al.* Submission of novel human milk miRNAs. *miRBase Database (Under preparation)*.

### **PRESENTATIONS/PUBLISHED ABSTRACTS**

**Alsaweid M**, Hepworth AR, Lefevre C, Hartmann PE, Geddes DT, Hassiotou F (2013). Optimizing the methodology to extract microRNA from human milk. *Combined Biological Sciences Meeting*, Perth, Australia, August 2013.

**Alsaweid M**, Hepworth AR, Lefevre C, Hartmann PE, Geddes DT, Hassiotou F (2013). Optimisation of microRNA extraction from human milk. *ComBio Conference*, Perth, Australia, October 2013.

**Alsaweed M**, Hartmann PE, Geddes DT, Hassiotou F (2013). MicroRNAs: novel molecules in breastmilk. *Australian Breastfeeding Association conference*, Perth, Australia, September 2013. **(Speaker)**.

Hassiotou F, **Alsaweed M**, Hepworth AR, Lefevre C, Hartmann PE, Geddes DT (2014). Extraction of RNA and microRNA from human milk. *Experimental Biology Conference*, San Diego, USA, April 2014.

**Alsaweed M**, Hartmann PE, Geddes DT, Hassiotou F (2014). MicroRNA profiling of human breastmilk cells and lipids and comparison with PMBCs and plasma in lactating mothers. *Endocrine and Reproductive Sciences Symposium*, Perth, Australia, August 2014. **(Speaker)**.

**Alsaweed M**, Hartmann PE, Geddes DT, Hassiotou F (2014). MicroRNA profiles in human breastmilk and comparisons with mother's blood. *Combined Biological Sciences Meeting*, Perth, Australia, August 2014.

**Alsaweed M**, Hartmann PE, Geddes DT, Hassiotou F (2014). Profiling of microRNAs in human milk reveals significant roles in breastfeeding mothers. *Australian Breastfeeding Association meeting*, Perth, Australia, October 2014. **(Speaker)**.

**Alsaweed M**, Savigni D, Hartmann PE, Geddes DT, Hassiotou F (2014). MicroRNA profiling of human breastmilk and maternal blood during lactation. *ComBio Conference*, Canberra, ACT, Australia, September 2014.

**Alsaweed M**, Tat-Lai C, Savigni D, Hartmann PE, Geddes DT, Hassiotou F (2014). MicroRNA profiling of human breastmilk and maternal blood during lactation. *International Society for Research on Human Milk and Lactation conference*, South Carolina, USA, October 2014.

Hassiotou F, **Alsaweed M**, Savigni D, Tat-Lai C, Hartmann PE, Geddes DT (2015). Profiling of human milk miRNA. *Experimental Biology Conference*, Boston, USA, April 2015.

**Alsaweed M**, Tat-Lai C, Newnham J, Hartmann PE, Geddes DT, Kakulas F (2015). Breastmilk miRNA primarily originate from the mammary gland. *Combined Biological Sciences Meeting*, Perth, Australia, August 2015. **(Poster Best Prize)**.

**Alsaweed M**, Tat-Lai C, Newnham J, Hartmann PE, Geddes DT, Kakulas F (2015). Small RNA sequencing of human milk cells reveals numerous known and novel miRNAs that may be affected by milk removal. *Combined Biological Sciences Meeting*, Perth, Australia, August 2015.

**Alsaweed M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). Breastmilk conserves numerous known and novel miRNAs originating primarily from lactating mammary gland. *International Society for Research on Human Milk and Lactation conference*, Stellenbosch, South Africa, March 2016.

**Alsaweed M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). Next generation sequencing of human milk cells and lipids reveals numerous known and novel miRNAs that remain consistent in the first 6 months postpartum. *International*

*Society for Research on Human Milk and Lactation conference, Stellenbosch, South Africa, March 2016.*

**Alsaweed M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). MicroRNA in human milk – Novel molecules with multifunctional significance for the mother and infant. *World Breastfeeding Week symposium*, Muscat, Oman, November 2016. **(Invited Speaker)**.

**Alsaweed M** (2016). The role of breastfeeding and lactation on the developmental origins of health and disease. *World Breastfeeding Week Symposium*, Muscat, Oman, November 2016.**(Invited Speaker)**.

**Alsaweed M**, Tat-Lai C, Hartmann PE, Geddes DT, Kakulas F (2016). Breastmilk conserves numerous known and novel miRNAs originating primarily from the lactating mammary gland. *3rd Middle East Molecular Biology Congress and Exhibition*, Doha, Qatar, November 2016.**(Speaker)**.

## **WORKSHOPS & TRAINING COURSES**

1. November 2017 – 2<sup>nd</sup> Day of Biology Department (Molecular Immunology, Allergy and Infection), College of Science, Majmaah University, Saudi Arabia.
2. May 2016 - Injuries Symposium “Prevention and Methods of Treatment & Rehabilitation”, Majmaah University, Saudi Arabia.
3. August 2015 - R Basics Training course, UWA Centre for Applied Statistics, Australia.
4. August 2015 - ANOVA, Linear Regression and Logistic Regression using SPSS, Centre for Applied Statistics, UWA, Australia.
5. January 2015 - Introduction to R, Queensland Facility for Advanced Bioinformatics (QFAB), WA, Australia.
6. January 2015 – Extended RNA Sequencing Analysis, Queensland Facility for Advanced Bioinformatics (QFAB), WA, Australia.
7. January 2015 – Variant detection using Galaxy, Queensland Facility for Advanced Bioinformatics (QFAB), WA, Australia.
8. October 2011 –Academic Leadership Development Workshop, Academic Leadership Center, Ministry of Higher Education, Saudi Arabia.
9. May 2011 - Confocal System Live Cells Imaging Workshop for two days, UK ANDOR TECHNOLOGY, Joint Centre for Genomics, King Abdulaziz City for Science and Technology (KACST), Riyadh, Saudi Arabia.
10. March 2011 - Bioinformatics of Sequence Analysis workshop, King Faisal Specialist Hospital and Research Centre (KFSH&RC), Riyadh, Saudi Arabia.
11. February 2011 - Applied Biosystems workshop (SOLiDTM Targeted Resequencing Library), Joint Centre for Genomics, King Abdulaziz City for Science and Technology (KACST), Riyadh, Saudi Arabia.

12. February 2009 - Research methods and communication (four months), Curtin University, Australia.
13. June 2007 - The Scientific Meetings for Infectious diseases, SSMMID, King Abdulaziz Medical City, National Guard, Saudi Arabia.
14. April 2007 - Training course on HPLC technology, Cairo University, Egypt.
15. February 2007 - The Third Regional Forum of Medical Laboratories, King Fahd Specialist Hospital, Saudi Arabia.

## **TEACHING**

1 <sup>st</sup> semester 2010-2011	PBIO 126 General Biology (practical sessions)	College of Applied Medical Sciences, Majmaah University
1 <sup>st</sup> semester 2016-2017	PBIO 126 General Biology	College of Applied Medical Sciences, Majmaah University
1 <sup>st</sup> semester 2016-2017	MDL 477 Diagnostic Molecular Biology	College of Applied Medical Sciences, Majmaah University
1 <sup>st</sup> semester 2016-2017	MDL 475 Research and Seminar	College of Applied Medical Sciences, Majmaah University
2 <sup>nd</sup> semester 2016-2017	MDL 485 Cellular and Molecular Pathology	College of Applied Medical Sciences, Majmaah University
2 <sup>nd</sup> semester 2016-2017	PBIO 126 General Biology	College of Applied Medical Sciences, Majmaah University
2 <sup>nd</sup> semester 2016-2017	PSSC 114 Learning and Communication Skills	College of Applied Medical Sciences, Majmaah University
1 <sup>st</sup> semester 2017-2018	MDL 477 Diagnostic Molecular Biology	College of Applied Medical Sciences, Majmaah University
1st semester 2017-2018	MDL 475 Research and Seminar	College of Applied Medical Sciences, Majmaah University
1 <sup>st</sup> semester 2017-2018	BME 612 Cellular and Molecular Biology (Master program)	College of Applied Medical Sciences, Majmaah University

## **AWARDS**

- 2016-2017 The certificate of Faculty Excellence Award, College of Applied Medical Sciences, Majmaah University
- 2015 Scientific poster award in Molecular biology, Combined Biological Sciences Meeting (CBSM), Perth, Australia.
- 2012-2016 Majmaah University scholarship.
- 2008-2010 Ministry of Higher Education scholarship.
- 2007 The certificate of Excellence in the internship year, Medical Laboratories, King Fahad Specialist Hospital, Buraydah, Saudi Arabia.

## **PROFESSIONAL MEMBERSHIPS**

- International Society for Research in Human Milk and Lactation.
- Australian Breastfeeding Association.
- Middle East Molecular Biology Sources.
- Saudi Society for Clinical Laboratory Sciences.

## **REVIEWER SCIENTIFIC JOURNALS**

- Breastfeeding Medicine Journal
  - Nutrition and Metabolic Insights
  - Kidney and Blood Pressure Research
  - Scientific Reports
  - Plos One
  - Research 1000
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