MedEdu Tabuk

Weekly Newsletter

Faculty of Medicine, University of Tabuk

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https://www.ut.edu.sa/en/web/mededu-tabuk/home

LAUNCHING OF MEDEDU TABUK WEBSITE

Message from the Dean - Dr. Marai M. Alamri

I am very glad to introduce to you the webpage of our newsletter, MedEdu Tabuk. I am grateful to **H.E. Prof. Abdullah M. Althiabi**, Rector of The University of Tabuk for his support and **Dr. Saad Almutairi**, Dean of IT deanship for facilitating the website. The webpage will increase the visibility and reach of MedEdu Tabuk, and allow us to archive past issues. I like to thank my colleagues and students at the Faculty of Medicine, Faculty of Applied Medical Science, Faculty of Pharmacy and Directorate of Health Tabuk region for their continuous support.

Click to visit our webpage

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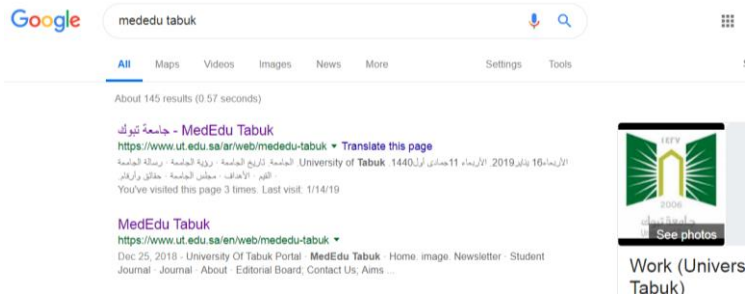
Message from the Editor- Dr. Tanveer Raza

We have launched the website of our newsletter MedEdu Tabuk and we are delighted to introduce it to you. The website is at par with our commitment to expand our role in the healthcare community o Tabuk. We hope the website will provide a message of who we are, what we are and what we stand for.

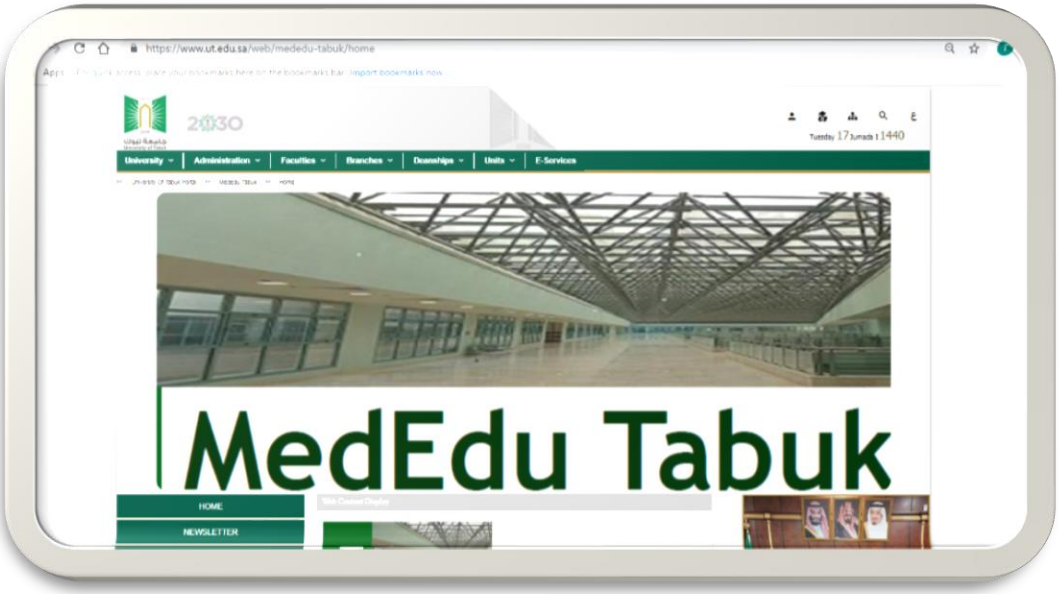
Over the last two and a half years, we have been distributing our newsletter via e-mail to our colleagues in Tabuk. With the website, we believe that we will be able to capture the attention of a greater audience. The website will archive all past issues and highlight major articles, news and photos.

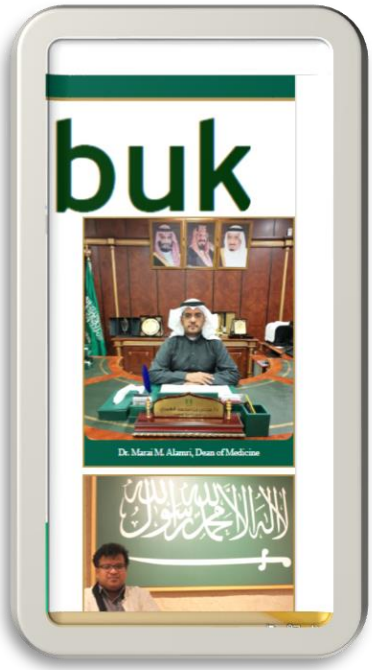


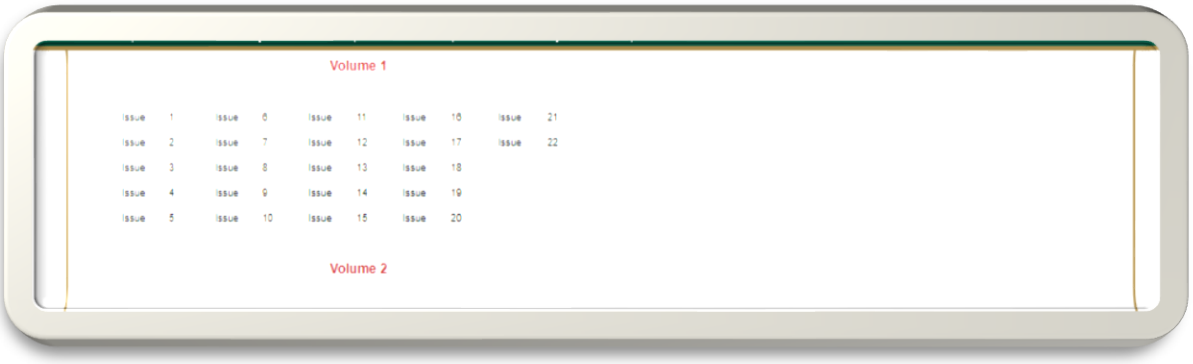
We still have a lot of work to do regarding our website. We plan to make it more compatible with smart phones and tablets. Inshallah, we will make changes soon for the better and look forward to your comments and suggestions. Thanks to all our patrons and well wishers for their continuous support.

In and Around Tabuk

SCREEN SHOTS FROM OUR WEBSITE







The Arabic Alphabets in Sign Language

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University of Tabuk
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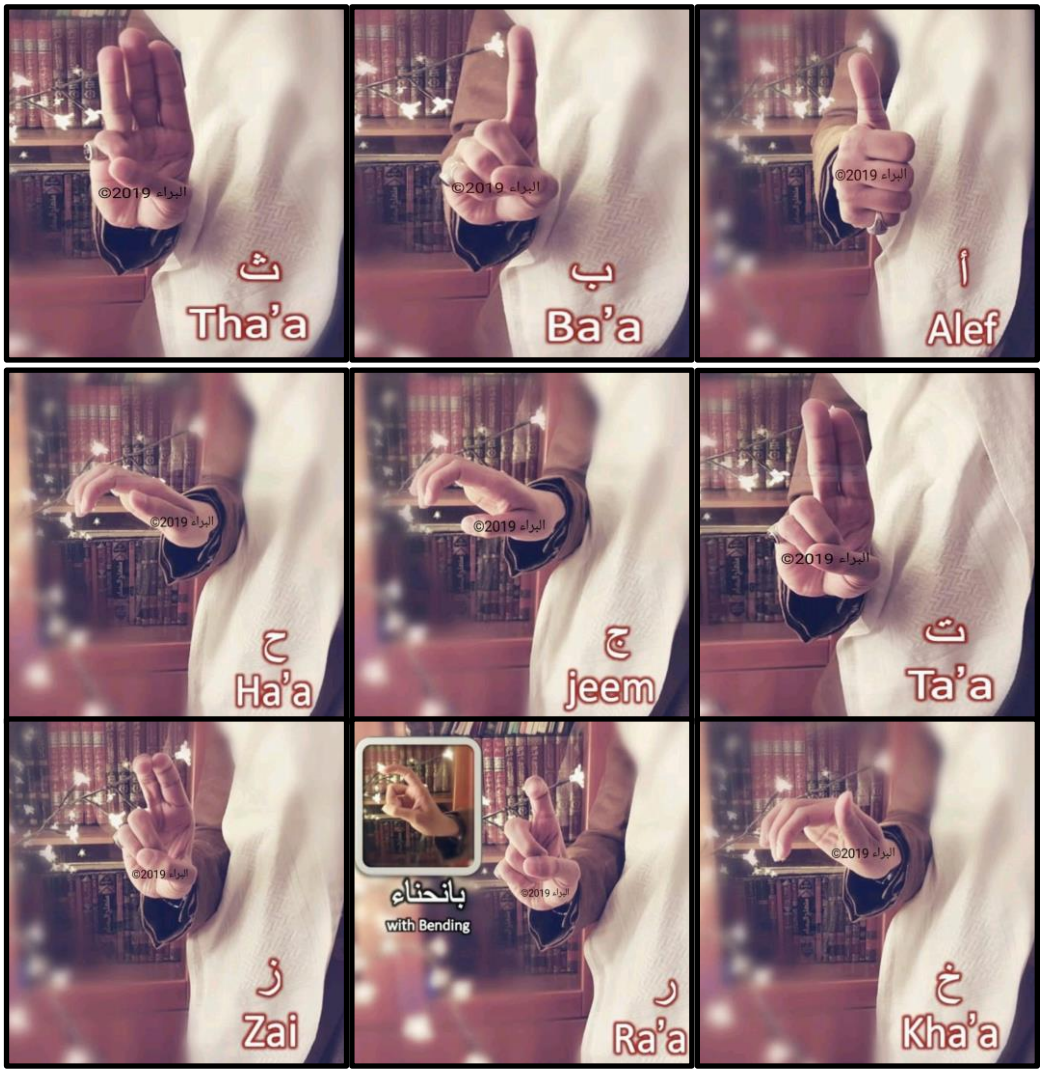


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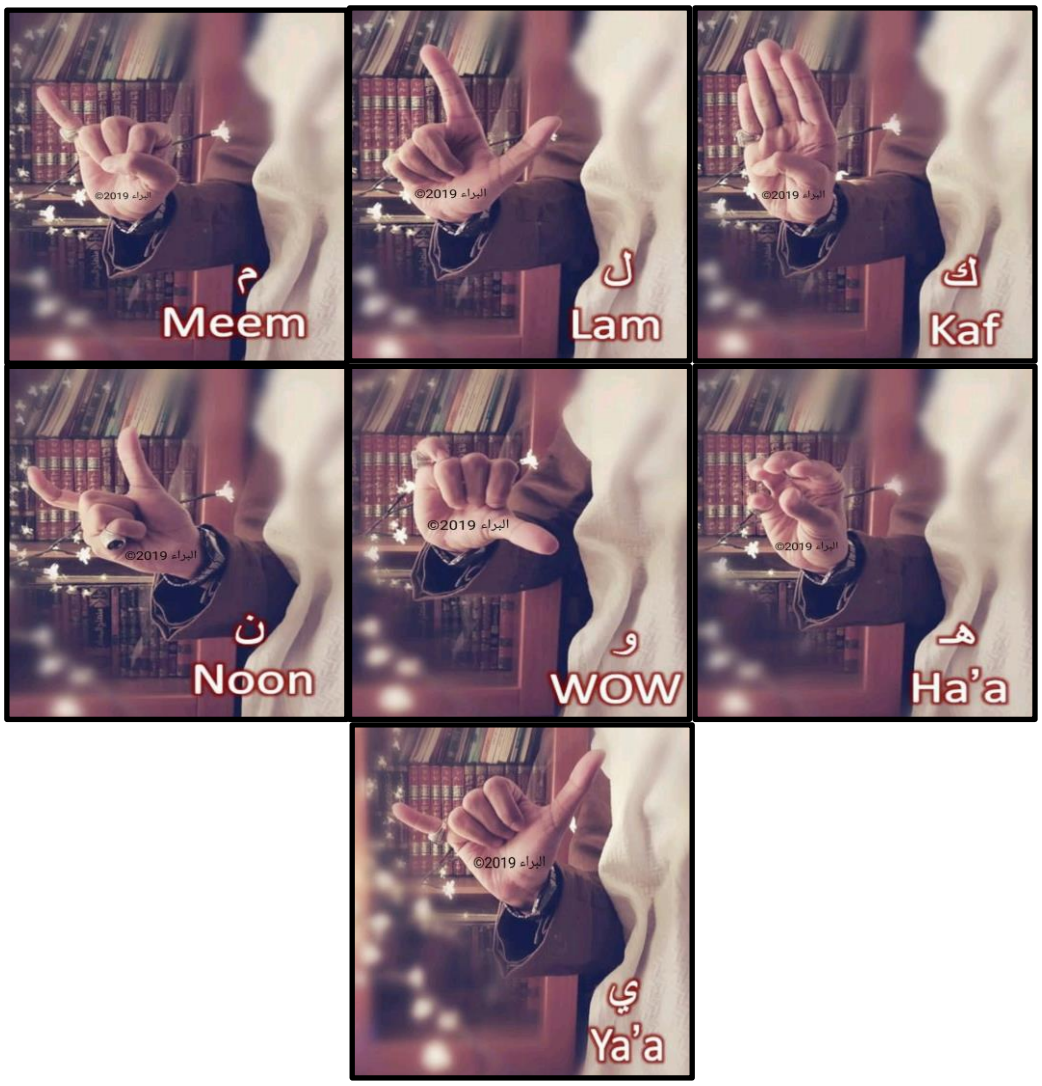
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EXOSOMES: THE RISING STARS IN MEDICINE

Nehal Mohsen Elsherbiny
Assistant Professor
Department of Pharmaceutical Chemistry
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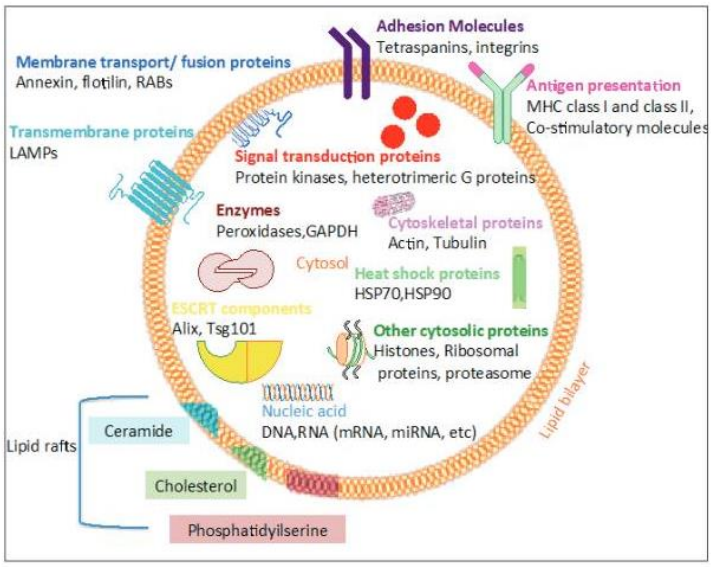
Exosomes are extracellular cell-derived membranous vesicles with nano- diameters (30–150 nm). Exosomal cargoes include proteins, mRNAs, micro RNAs and lipids. These biologically active contents are carried by exosomes from donor to target cells and play an essential role in cell-cell communication [1].

Exosomes and cancer

Tumor-derived exosomes play crucial role in tumor growth and metastasis, drug resistance and immune surveillance escape. Exosomes are currently advantageous over traditional serological markers due to their unique features including high stability, specificity and antigenicity [2].

Exosomes and neurodegenerative diseases

Accumulating evidence links exosomes to neurodegenerative diseases such as Parkinson's disease and Alzheimer's disease. Exosomes facilitate pathological aggregation and spreading of misfolded proteins characteristic of each neurodegenerative disease (α-synuclein, β-amyloid and tau proteins) [3].



Molecular composition of an exosome. Garcia-Contreras *et al.* Exosomes as biomarkers and therapeutic tools for type 1 diabetes mellitus. Eur Rev Med Pharmacol Sci. 2017; 21(12):2940-2956.

Exosomes and diabetes

A large body of evidence demonstrates the implication of exosomes in pathogenesis of type 1 diabetes mellitus. Insulin producing pancreatic β cells release exosomes that accelerate diabetes induction via stimulation of *in vivo* autoimmune response. These autoimmune events precede the onset of clinical diabetes and therefore this period can be excellent for identification of patients at high risk and prevention of disease development. More

importantly, current researches suggest the use of exosomes in combination with clinical islet cell transplantation for severe cases of type 1 diabetes mellitus to improve islet function and induce tolerance to transplantation [4]. In type 2 diabetes, exosomes have been shown to play an important role in obesity-induced insulin resistance. Adipose tissues-derived exosomes stimulate monocytes differentiation into active macrophages and induce pro-inflammatory cytokine secretion. On the other hand, human mesenchymal stem cells-derived exosomes have been found to improve peripheral insulin sensitivity in type 2 diabetes [5].

Exosomes as drug delivery nano-system

Exosomes are cell-membrane-camouflaged nano-carriers that could serve as a promising drug delivery system for clinical application. This strategy could overcome the disadvantages of liposomes and lipid-based nanoparticles such as potential toxicity and immunogenicity of artificial drug carriers in addition to possible failure of penetration and targeting specific organs. Hence, exosomes by their low immunogenicity, well tolerability, excellent bio-distribution and biocompatibility can serve as favorable drug delivery system for treatment of various diseases [6].

Exosomes are currently attracting great attention as diagnostic markers, therapeutic targets and drug delivery system. Till now, exosome research has yielded invaluable insights regarding the normal physiology and pathology of many body organ systems. Further trafficking of exosomes may bring new hope to solve the mystery and find the missing links in many diseases.

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ACADEMIC AFFAIRS ARRANGEMENT FOR FACULTY OF MEDICINE

Prof Magdy M. ElShamy
Faculty of Medicine

This Week:

For Female Section:

- **Endocrine System Module:** 3rd year, Final MCQs Exam on Sunday, 20/1/2019.
- **Endocrine System Module:** 3rd year, **OSPE** on Monday, 21/1/2019.
- **Reproduction System Module**: 3rd year, Starts on Tuesday, 22/1/2019.
- **Abnormal Human Morphology II (AHM II) Module (Pathol & Biochem):** 2nd Year, First Mid Module Exam on Sunday, 20/1/2019.

For Male Section:

- **Endocrine System Module:** 3rd year, Final MCQs Exam on Sunday, 20/1/2019.
- **Endocrine System Module:** 3rd year, OSPE on Monday, 21/1/2019.
- **Reproduction System Module**: 3rd year, Starts on Tuesday, 22/1/2019.
- **Abnormal Human Morphology II (AHM II) Module (Pathol & Biochem):** 2nd Year, First Mid Module Exam on Sunday, 20/1/2019.

For submissions
Editorial Office, Faculty of Medicine, University of Tabuk. Email: mededutabuk@ut.edu.sa

Also, for Faculty of Applied Medical Science, University of Tabuk (eosman@ut.edu.sa)

And Faculty of Pharmacy, University of Tabuk (pchettiar@ut.edu.sa)

PROMOTION CELEBRATION DR. MOHAMMAD FAHADULLAH

Department of Medical Laboratory Technology
Faculty of Applied Medical Sciences

The Department of Medical Laboratory Technology, Faculty of Applied Medical Sciences is celebrating the promotion of Dr. MOHAMMAD FAHADULLAH as ASSOCIATE PROFESSOR. This promotion process has undergone the stringent process and usual procedure of the promotion. His promotion serves as an Inspiration to everyone that we need to move, progress and grow personally and professionally. Dr Fahad invited colleagues for a dinner gathering to celebrate this occasion. It was a tremendous social gathering of the department, we really enjoy it. All colleagues participated in the event and stressed upon that we should have such gathering in a while for some good reasons.

Figure 1: Dean of FAMS Dr. Hamad S. Al Amer delivering memorial to Dr. Mohammad Bahaullah in behalf of staff members of MLT department

About Dr Fahad:

Mohammad Fahad Ullah, Ph.D, MRSC is an Associate Professor of biochemistry in the Department of Medical Laboratory Technology (FAMS) and a research scientist at Prince Fahd Research Chair, University of Tabuk, Saudi Arabia. He received his academic degrees along with a gold medal in M.Sc. (biochemistry) from Aligarh Muslim University, India. Further he worked as a research associate at Experimental Oncology Laboratory, Department of Biomedical & Diagnostic Sciences, University of Tennessee, USA. His research interests include mechanistic insight into the cell signaling and therapeutic pathways against chronic diseases including cancer and diabetes. He is an active member of AACR (USA) /Royal Society of Chemistry (UK) and member of the editorial/reviewer board of a number of scientific journals. Dr. Ullah has more than 8 years of experience in teaching biochemistry to the students of biological and health sciences. His academic works include more than 50 publications in reputed journals which have over 1700 citations and an h-index of 22. He has also published three books entitled "Critical dietary factors in cancer chemoprevention" (Springer-Switzerland), "Illustrated notes on biomolecules" (Partridge-Singapore) and "Nutraceuticals and Natural Product Derivatives: Disease Prevention & Drug Discovery" (John Wiley-UK).