Think Pharmacy

PERIODIC PHARMACY MAGAZINE

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Al AIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

ABY DHABI CAMPUS

COLLAGE OF PHARMACY

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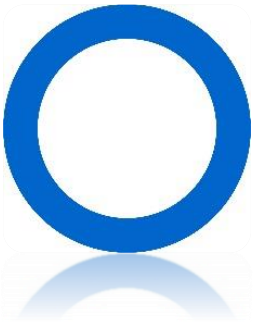

FDA APPROVED

College Activity

1-Orientation Day

An orientation meeting was organized by the college of pharmacy to the freshmen students who joined the college at the beginning of the academic year 2018-2019. The academic staff delivered talks about the college rules, student's rights, academic advising, and course description. Students were also encouraged to participate in events and committees and other extracurricular activities to improve their social skills and combine study with fun.

2-World-Pharmacist Day

The College of Pharmacy students raised an awareness campaign at the university about the role of pharmacist in society. The other part of this event was done in Dalma mall - Abu Dhabi. The students explained to the people about the various roles of pharmacists and job opportunities available for them.

3-World Diabetes Day

Pharmacy students participated in the walking marathon “Walk 2018” which took place in Yas Marina Circuit - Abu Dhabi. The event included a 5 Km walk, in addition to a variety of acrobatic and sports activities. The aim of this event was to raise awareness of diabetes and to encourage healthy lifestyle through exercise and other sporting activities.

Top Students 2017/2018

2nd Year

Abdallah faissal Abou hajal

Mohammed Molham Sakkal

3rd Year

Aya Mahmoud Al-Qassem

Dina Fouad Alagha

Rana Chaim Abdulrahman

Samar Samer Hisham

Shaden Al-Atassi

Faculty Publications

Drug Design, Development and Therapy

Dovepress
open access to scientific and medical research

Open Access Full Text Article

ORIGINAL RESEARCH

Identification of new inhibitors of Mdm2–p53 interaction via pharmacophore and structure-based virtual screening

This article was published in the following Dove Press journal:
Drug Design, Development and Therapy

Noor Atatreh[1]
Mohammad A Ghattas[1]
Sanaa K Bardaweel[2]
Sara Al Rawashdeh[1]
Mohammad Al Sorkhy[1]

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cells

MDPI

Review

Endoplasmic Reticulum Stress in Metabolic Disorders

Rose Ghemrawi [1], Shyue-Fang Battaglia-Hsu [2] and Carole Arnold [2,*]

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ANALGESIC EFFECT OF QUERCETIN 3,7-O-DIMETHYL ETHER ISOLATED FROM *SALVIA OFFICINALIS*

Esam Qnais*[1], Yousra Bseiso[1], Kawthar Kayed[2], Mohammad Wedyan[1], and Hakam Alkhateeb[3]

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Diabetes

What is Diabetes?

A condition where the body is unable to regulate the amount of glucose (sugar) in the blood due to lack of insulin production, insulin sensitivity, or both. Insulin is a hormone produced by the pancreas that helps the body's cell to use the glucose in the food to produce energy. Without insulin, the glucose from the food we take builds up in the blood causing high blood sugar level.

Types of diabetes

Diabetes can be classified into three types based on the age, suddenness of onset, and physical characteristics of the patient:

Type 1:

It happens when the body attacks the pancreas, so the cells that produce insulin become dysfunctional. As a result, there is an absolute lack of insulin. We do not know for sure the exact reason for this reaction, but it appears to be triggered by a virus on an infection. Type 1 diabetes can develop at any age, but it is most common in children and young adults. The symptoms can appear relatively quickly over a period of few weeks.

Type 2:

It happens when the pancreas produces some insulin but the body's cells reject it (insulin resistance). After sometime, the pancreas gets exhausted and insulin production also reduces. It usually appears in adults above 35, however, nowadays it is becoming common among children and young adults. This type of diabetes develops slowly over years, so the signs and symptoms may not be very pronounced. The majority of obese individuals have type II diabetes.

Gestational diabetes:

A condition in which pregnant women exhibit high blood glucose level. For the majority of pregnant women, gestational diabetes resolves after delivery and may not cause any noticeable symptoms. However, it increases the chances for developing type II diabetes later in life.
Left untreated, it is also associated with a number of complication to the fetus such as fetal overgrowth (big baby syndrome), and feta death especially during the third trimester.

Symptoms

Symptoms of diabetes occur as a result of accumulation of glucose in the bloodstream. The body tries to get rid of the excess glucose by increasing the amount of urine, which in turn leads to dehydration and increased thirst.

The main symptoms are:

- Polyphagia (frequently hungry)
- Polyuria (frequently urinating)
- Polydipsia (frequently thirsty)

Other Symptoms Might Include

- Blurred vision
- Fatigue
- Weight loss or weight gain
- Poor wound healing
- Dry mouth
- Recurrent infections such as vaginal yeast infections, or external ear infections (swimmers ear)

It is important to remember that not everyone with diabetes will have all these symptoms.

Risk Factors

These are some of the factors that increase the chances of developing diabates

How to confirm that you have diabetes

If you have any of the previously mentioned symptoms. Check your blood sugar level by:

1. **Fasting blood sugar test.** A blood sample will be taken after fasting for at least 8 hours.
   - **Normal:** 70 - 99 mg/dL
   - **Prediabetes:** 100 to 125 mg/dL
   - **Diabetes:** Higher than 126 mg/dL

2. **Oral glucose tolerance test.** It is done after fasting for 8 hours, then the blood sugar test is done 2 hours after drinking a glucose solution.
   - **Normal:** Less than 140 mg/dL
   - **Prediabetes:** 140 to 199 mg/dL
   - **Diabetes:** Higher than 200 mg/dL

3. **HBA1C**: It estimates glucose levels in blood over the previous three months.
   - **Normal:** less than 5.7%
   - **Prediabetes:** 5.7 - 6.4%
   - **Diabetes:** More than 6.4%

Treatment

The aim of treatment is to maintain near normal blood glucose level and to reduce the risk of complications. People with type I diabetes cannot produce insulin so they depend on daily insulin injections to control their blood glucose level. As for type II diabetes, treatment starts with diet control and regular physical activity. If the patient shows no response –depending on the patients clinical condition- an oral hypoglycemic drug and/or insulin can be introduced.

Types of insulin

1) **Short-acting (regular) insulin:**
   Effect starts in (0.5-1 hour), lasts for (3-6 hrs.)
2) **Rapid-acting insulin:**
   Effect starts in (15 min), lasts for (3-4 hrs.)
3) **Intermediate-acting (NPH) insulin:**
   Effect starts in (1-3 hrs.), lasts for (10-16 hrs.)
4) **Long-acting insulin:**
   Effect starts in (1.5-2 hrs.), lasts for (12-24 hrs.)

Oral hypoglycemic drugs

1) **Drugs that increase insulin secretion as:**
   - Glimepiride
   - Repaglinide

2) **Drugs that increase insulin sensitivity as:**
   - Metformin
   - Rosiglitazo

Complication

Long-term complications of diabetes develop gradually. The longer you have diabetes — and the less controlled your blood sugar — the higher the risk of complications. Eventually, diabetes complications may be disabling or even life-threatening.

Possible complications include:

Kidney Damage:

The kidneys contain millions of tiny blood vessel clusters that filter waste from the blood. Diabetes can damage this delicate filtering system. Severe damage irreversible end-stage kidney disease. Which may require dialysis or a kidney transplant.

Nerve Damage:

Excess sugar can injure the walls of the tiny blood vessels (capillaries) that nourish your nerves, especially in your legs. This can cause:

- Tingling
- Numbness

Heart Diseases:

Excessive and uncontrolled high blood glucose may damage blood vessels and lead to heart conditions such as:

- stroke
- hypertension
- heart attacks

Eye Damage: Increased blood glucose level damage the blood vessels. Damaged blood vessels can harm the retina, causing a disease called Diabetic retinopathy.

- Glaucoma (increase in pressure inside the eyes)
- Cataracts (clouding of the eyes lens)
- Blindness

Foot Damage:

Over time, high blood glucose levels can damage nerves and blood vessels. Nerve damage can result in numbness in the feet, so the patient may not feel a cut or a sore. This may lead to ulcer, infections and amputation in severe cases.

Living with diabetes

Diabetes is a life-long disease, which have no absolute cure. But, you can live with reduced complications by following some measures:

- Blood glucose monitoring: Regular self-monitoring of blood glucose level is necessary with proper documentation.

- Healthy food: Food choice should contain essential ingredient with reasonable quantity.
- Regular exercise: Exercise improves blood glucose control and should only be undertaken under medical supervision.
- Medication adherence: Taking medications on time as directed by health care provider is required for optimal control.

Diabetes Myths

1) **Myth: Eating sweets can cause diabetes.**

   Fact: It does not cause diabetes. But sugar seems to play an indirect role. Eating too much sugar can lead to obesity, which is a risk factor for type 2 diabetes.

2) **Myth: You shouldn't get pregnant if you have diabetes.**

   Fact: diabetic women can get pregnant with proper

Latest technology in diabetes

The iHealth Glucometer is a portable device for self-monitoring of blood glucose level. It communicates with smart-phones, either Android or iPhone, through the iHealth Glucose-Smart app which allows you to view and share all your blood glucose measurements. The app is also able to compare your results throughout the day (when you wake up, before and after food, before and after having your medication), or throughout the previous weeks or months.

Testing process

1- Launch the iHealth application on your smart phone
2- Scan the QR code of the strip bottle (to check the strips validity).
3-Insert test strip and the device in the headphone jack (some devices require only Bluetooth connection to your smart phone).
4- Prick your finger using the lancet and place one drop of blood on the test strip
5- View the results on your smart phone.

Recently Approved Drugs

Invokana (Canagliflozin)

In **Oct 30, 2018** FDA approved **Invokana**, which is the only oral type 2 diabetes treatment to reduce the risk of heart attack, stroke or cardiovascular death in adults with type 2 diabetes and established cardiovascular disease.

It is a Selective sodium glucose co-transporter 2 (SGLT2) inhibitor, which work by causing patients to expel excess glucose through urine.

Pharmacist Chat

1. **Can you please talk briefly about yourself and about your experiences?**

My name is Noor Aldeen Atatreh. I am the Chancellor of Al Ain University of Science and Technology and I'm a pharmacist by profession. I hold a Ph.D. degree in pharmacy from the University of Manchester, UK, and MSc in Drug Chemistry from Newcastle Upon Tyne University, UK.

2. **Why did you specifically pick pharmacy as a major?**

As a High School student, I was interested in Chemistry and Biology. Although I was indecisive between pharmacy and medicine, after all I went for pharmacy and I came to believe that this is the profession I would like to spend my life in. Pharmacy is a very prestigious and interactive profession. As well as it offers many opportunities more than other jobs and professions in the medical field.

3. **If we rewind the past, would you still choose pharmacy?**

Yes, Absolutely. I don't regret this field, but if so, I would have chosen a better direction for my professional experience by going directly for research and masters after my bachelor, rather than spending few years working in a pharmacy; because time is the most precious thing in life.

4. **How did you deal with your challenges?**

I believe that every person must have principles to refer to whenever they encounter any difficulties. For me, I usually get back to the religion, and idols as Prophet Mohammed -peace be upon him- and Sheikh Zayed -may his soul rest in peace-. Then, with determination I cover come challenges to achieve my goals.

5. **What kept you motivated to continue your education?**

My great passion for research in addition to my competitive personality kept me motivated to continue my higher studies.

6. **What is the hardest part of your job as a Chancellor?**

I always strive for excellence and perfection, at all levels e.g. students, staff and the whole institution. Therefore, I always feel that there is something more to do for the best of the university.

7. **What advice do you give to the students?**
    - Never give up.
    - Always do what you love.
    - You should have basic principles to refer to when you face challenges in your life.
    - You are at the most beautiful stage of your life, do not stick to routine, do something different/unusual every day.

Interviewers: Rola Audeh, Dina Alagha, Rama Ahmed Al Khawaldeh

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