

List of Publications

Department of Food and Nutrition, Faculty of Human Sciences and Design, King Abdulaziz University, Jeddah, KSA.

- 1- **Maha A. Hijazi, Hanan A. Jambi, Buthaina M. Aljehany, and Maha A. Althaiban (2019).** Potential Protective Effect of *Achillea fragrantissima* against Adriamycin-Induced Cardiotoxicity in Rats via an Antioxidant and Anti-Inflammatory Pathway. BioMed Research International, volume 2019 |Article

ID 5269074 | 10 pages | <https://doi.org/10.1155/2019/5269074>

<https://www.hindawi.com/journals/bmri/2019/5269074/>

Abstract: Adriamycin (Adr) is a cytotoxic anthracycline agent that is utilized to manage many types of tumors, but its clinical use is undesirable due to severe cardiotoxicity. The present study aimed to investigate the cardioprotective effect of *Achillea fragrantissima* (*A. fragrantissima*) against Adr-induced cardiotoxicity through the antioxidant and anti-inflammatory metabolic pathways. A single dose of Adr was injected in rats to induce cardiotoxicity. Rats are divided into 5 groups, control, *A. fragrantissima* 800, Adr, *A. fragrantissima* 400 + Adr, and *A. fragrantissima* 800 + Adr. 72 h after Adr administration, electrocardiographic (ECG) study was performed for all rats. Serum and hearts were then collected for biochemical and histopathological studies. *A. fragrantissima* ameliorated Adr-induced ST-segment elevation. It reduced Adr-induced elevation in lactate dehydrogenase (LDH), creatine kinase-MB (CK-MB), thiobarbituric acid reactive substance (TBARS), tumor necrosis factor-alpha (TNF- α), interleukin-1 beta (IL-1 β), and IL-6. It also protected against Adr-induced histopathological changes. Pretreatment with the extract increased heart tissue contents of glutathione peroxidase (GSH-PX) and reduced glutathione (GSH). Phytochemical analysis of the extract revealed that it is rich in phenolic and flavonoid active constituents. The results of this study revealed that *A. fragrantissima* extract ameliorates Adr-induced cardiotoxicity *via* an antioxidant and anti-inflammatory mechanisms. Further studies are warranted in order to recognize the precise active constituents of this natural extract which are responsible for the antioxidant and anti-inflammatory actions.

- 2- **Maha A. Althaiban (2019).** Evaluation of Renoprotective Effect of *Costus Afer* Leaf Extract on Rats exposed to Cyclosporine: Antioxidant and Anti-inflammatory Pathways. Journal Of Biochemical Technology, 10(2): 1-7 ISSN: 0974-2328.

<https://jbiochemtech.com/en/article/evaluation-of-renaoprotective-effect-of-costus-afer-leaf-extract-on-rats-exposed-to-cyclosporine-antioxidan>

Abstract: *Costus Afer* Leaf (Cost) Extract Used As Traditional Herbal Therapy For Various Diseases. Long Term Treated With Cyclosporine (CsA) Concomitant With Development Of Renal toxicity. The Current Study Aims To Assess The Nephroprotective Mechanism Effect Of Cost In CsA Nephrotoxic Rats. Forty Male Rats Were Distributed Into 4 Groups; Control

(Cont), CsA; Rats Intraperitoneal (I.P) Injected With CsA (Twenty Five Mg/Kg B.Wt) For Twenty One Days, Cost 750 Mg/ Kg B.Wt +CsA, Cost 1500 Mg/ Kg B.Wt +CsA; Rats Received Cost Orally For Twenty One Days, Followed By I.P. Injection With CsA. Biochemical Samples Were Collected After 24 H From The Last Dose Of CsA As Well As Renal Tissue Samples Were Collected For Histopathological Examination. Renal Oxidative Stress Biomarkers (Lipid Peroxides (MDA) And Catalase (CAT)) And The Serum Anti-Inflammatory Biomarkers (Tumor Necrosis Factor Interleukin-1beta (IL-1 β) And -Alpha (TNF-A)) Were Determined. kidney Functions; Serum Levels Of Creatinine, Uric Acid And Urea As Well As Serum Ionic Levels Of Sodium Na⁺ And Potassium K⁺ Were Measured. The Results Of This Study Revealed That Injection Of CsA Induced Significant Increase In Renal MDA, Serum Anti-Inflammatory Cytokines (TNF-A And IL-1 β), Serum Kidney Function Parameters And The Serum Ionic K⁺ Levels, With Significant Decrease In The Renal CAT And Serum Ionic Na⁺ Compared With Cont Group. Renal Tissues Showing Congestion, Focal Hemorrhage And Interstitial Nephritis, With Coagulating Necrosis Of The Renal Tubules In The CsA Group. Oral Administration Of Cost Extract Significantly Ameliorated CsA- Induced Renal Oxidative Stress. It Reduced CsA-Induced Elevation In Serum Anti-Inflammatory Cytokines And Kidney Function Parameters. As Well As The Changes In Ionic Na⁺ And K⁺ Levels Compared With CsA Group. It Also Protected Against CsA-Induced Histopathological Changes. Therefore, Cost Extract Ameliorates Nephrotoxicity Caused By CsA Through Antioxidant And Anti-Inflammatory Mechanisms.

- 3- **Maha A. Althaiban (2019)**. Evaluation of Hepatoprotective Activity of Neem Extract in Rifampin Induced Acute Hepatic Failure in Rats. International Journal of Pharmaceutical Research & Allied Sciences, 8(3):29-36.

<https://ijpras.com/en/article/evaluation-of-hepatoprotective-activity-of-neem-extract-in-rifampin-induced-acute-hepatic-failure-in-rats>

Abstract: The liver plays a role in many body functions such as immune defense and the metabolism of sugar and fat. Rifampin (RIF) is an antibacterial drug prescribed to treat tuberculosis (TB) along with multiple drugs. Other types of infections may also be treated with rifampin. Although the therapeutic effect of RIF has many adverse effects such as hepatotoxicity. Neem (NM) has more than 140 compounds from various parts that have been isolated and can thus play a role in preventing hepatotoxicity. The research was carried out to examine the protective effect of neem leaves extract (NMLE) on RIF-induced liver damage. Forty male rats had been divided into four groups; Group I) non-treated negative control group, (Group II), which was given RIF (54 mg/kg/day) for thirty days, (groups III and IV) intoxicated rats received orally the NMLE in doses of two hundred and fifty and five hundred mg/kg/day respectively, for 30 days. At day 30, blood was collected for biochemical analysis, as well as the liver was also examined histopathologically. The results revealed that the NMLE at the two dosage levels significantly decreased serum levels of liver enzymes and

MDA accompanied by significantly increased in activities of GSH, SOD, and showed anti-inflammatory effects as evidence by significantly decreased in TNF- α and IL-1 α levels compared to RIF group II. There was also an improvement in histopathological alterations observed in liver tissues of hepatotoxic rats. Therefore, the administrations of NMLE has hepatoprotective effects in hepatotoxic rats via antioxidant and anti-inflammatory pathway.

- 4- **Maha A. Althaiban (2019).** Hypocholesterolemic and Antioxidant Effects of Persea Americana Leaf Extract on Hypercholesterolemic Rats. *Medical Science*, 23(100): 920-928.

http://www.discoveryjournals.org/medicalsecience/current_issue/v23/n100/A11.pdf

Abstract: Plants are a major source of substances with therapeutic abilities. However, only a little number of plants around the world had been phytochemically examined. Hypocholesterolemic and antioxidant activity of Persea americana leaves methanolic extract (PALE) was assessed in this research. Hypercholesterolemia was induced by feeding the animals diets enrich with cholesterol (2%) for four weeks. Fifty male albino rats had been distributed into five equivalent groups. Group 1 was held as a non-treated group (negative control) Group 2, which was held as a hypercholesterolemic group (positive control) (cont. (+), groups (3), (4) and (5) received orally Atorvastatine (AT) (40 mg/ kg), PALE in doses of twenty and forty mg/kg/day respectively, for 4 weeks. At the last day, blood was collected for biochemical analysis from all groups. The heart was also examined histopathologically. The results illustrated that the PALE significantly decreased serum levels of lipid profile, total cholesterol (TC), triglycerides (TG), liver enzymes and lipid peroxidation (MDA) but there were an increased in the antioxidant enzymes of hypercholesterolemic rats compared to control rats. There was also an improvement in histopathological changes observed in the heart of hypercholesterolemic rats. Therefore, the administration of PALE has antioxidant and anti-hypercholesterolemic effects on hypercholesterolemic rats.

- 5- **Jamilah M. Hashemi** and Samaa M. A. Al-Zaeem (2019). Effect Of Nutritional Educational Program to Control Hyperkalemia, Hyperphosphatemia, and phosphate on Binder Hemodialysis Patients. *International Journal of Current Research*, Vol. 11, Issue, 03, pp.1817-1820.

<https://www.journalcra.com/article/effect-nutritional-educational-program-control-hyperkalemia-hyperphosphatemia-and-phosphate>

Abstract: Background: Hyperkalemia and Hyperphosphatemia are common among Hemodialysis (HD) patients. It is caused by the excessive ingestion of potassium and phosphate-rich foods. Dieting helps reduce this increase in blood serum also they use an oral phosphate binder medication can to help lower phosphate absorption. However, some characteristics of using phosphate binders are associated with poor adherence. Additionally, the hemodialysis patients mentioned some side effects of the medication. Monitoring nutritional parameters is an important factor for treating hemodialysis patients. Nutritional

intervention by a dietitian is key when managing hyperkalemia and hypophosphatemia. The aim of this study was to evaluate the effect of the dietitian educational program to control hyperkalemia, hypophosphatemia and phosphate binder among HD patients in the hemodialysis charity center (Hisham Attar Dialysis Center), Jeddah, Kingdom of Saudi Arabia. Methods: a comparison was made between HD patients before and after a nutritional educational program. A group of 190 patients was assessed using medical history, hemodialysis status, Anthropometric measurements including [height, weight after a dialysis session and body mass index (BMI, kg/m²)]. Plus, biochemical measurements including (Potassium and Phosphate) levels were examined. Furthermore, groups of HD patients received teaching sessions by a dietitian. An individual meeting with each one of the HD patients or with his/her family was held in a dietitian clinic room. Next, data were collected before and after the nutritional educational program. Results: a significant decrease has been found in the average levels of potassium from before the program as compared to 1 to 3 months following the program. The laboratory results for phosphorus levels showed a significant increase in Phosphorus after 1 to 3 months from the nutritional educational program. A significant decrease of Phosphorus binder was observed after the nutritional educational program ($P < 0.05$). Interventions involving the nutritional educational program supported the adherence of dietary recommendations additionally, positive changes and improvements to HD patient health status were found. This study suggested that repeated, personalized nutritional educational program is an effective way to improve patient care as well as to prevent abnormal potassium and phosphate parameters and reduce the use of phosphorus binder medicine.

- 6- **Jamilah M. Hashemi (2019)**. Pathways of gastro protective potential of chamomile in indomethacin induced ulcerogenic in rats. International Journal of Current Research, Vol. 11, Issue, 03, pp.2277-2283.

<https://www.journalcra.com/article/pathways-gastro-protective-potential-chamomile-indomethacin-induced-ulcerogenic-rats>

Abstract: Indomethacin (IND) is an extensively used drug. However, it provokes aggressive ulcerogenic potential. Chamomile is a widely used as natural herb with a powerful antioxidant activity. This study aims to assess the effects of chamomile flowers extract (CFE) in IND induced peptic ulcer (PU). Fifty rats classified to five groups; control, ulcer, and pretreated groups with CFE (200 mg/kg), pretreated with ranitidine RAN (50 mg/kg), and pretreated with CFE+RAN for 14 days pre-ulcer induction. Pretreatment with CFE and/or RAN significantly decreased ulcer index, gastric acidity, pepsin activity, gastric oxidative stress biomarkers, serum anti-inflammatory cytokines, and histopathological changes induced by IND. The pretreated groups significantly elevated gastric enzyme antioxidant activity, mucin content and gastric mucosal prostaglandin E₂ with comparison to IND group. Pretreatment with CFE+RAN displayed the most gastroprotective effects compared with pretreated with either CFE or RAN alone. Collectively, the antisecretory and cytoprotective

effects of antioxidant and anti-inflammatory activities demonstrated by the CFE's gastroprotective action.

- 7- **Jamilah M. Hashemi** and Hanyh A. Aljohani (2019). The Relationship between Feeding Types and Infants' Growth Patterns in Jeddah, Saudi Arabia. *World Journal of Environmental Biosciences*, volume 8 (1): 30-36.

<https://environmentaljournal.org/en/article/the-relationship-between-feeding-types-and-infants-growth-patterns-in-jeddah-saudi-arabia>.

Abstract: In the current study, the composition of polyphenols of *Tamarix Gallica*, including phenolic acids and flavonoids, was fully examined. Colorimetric methods were applied to assess the total phenolic and flavonoid contents; the individual polyphenols were determined in various phenolic groups through HPLC analysis, and their quantities were measured. In this plant, a total of five phenolic compounds were identified for the first time. The main peaks which were removed at 18.53 min, were considered as vanillic acid. There were two other main peaks which were eluted at 35.78 and 17.27 min that were considered as naringin and caffeic acid respectively. In these compounds, three components with retention times of 23.46, 25.81 min were determined. A practical tool for the metabolite characterization of *Tamarix gallica* can be applied in the developed technique to demonstrate a potential source of bioactive compounds to be used in phototherapy.

- 8- Safia M. Bahshwan, Samar O. Abdullah Rabah and **Arwa M. Turkistani** (2019). A Comparative Study of the Effect of Crude and Nanoparticles *Costus Speciosus* on Testicular Damage Associated to Experimentally Induced Type 2 Diabetes. *Pharmacophore*, 10(6): 99-106.

<https://pharmacophorejournal.com/en/article/a-comparative-study-of-the-effect-of-crude-and-nanoparticles-costus-speciosus-on-testicular-damage-associated-to-experimentally-induced-type-2-diabetes>

Abstract: Background: Diabetes mellitus is linked with many macrovascular and microvascular complications including cardiovascular, neuro, eye, kidney, liver, and reproductive injuries. Both clinical and animal research disclosed deterioration of spermatogenesis, decreased sperm count, seminal fluid volume, sperm motility, and depressed testosterone concentrations during diabetes. Nanotechnology employment in the alternative medicine field is one of the rapidly rising areas. Objective: To investigate the therapeutic effect of crude, nanoparticles (NPs) *Costus speciosus* (*C. speciosus*), and metformin against type 2 diabetes. In addition, their role in treating diabetes-induced testicular toxicity was investigated. Material and Methods: Diabetes was induced by feeding the rats with a high-fat diet (HFD) for 2 weeks followed by single i.p. injection of STZ at a dose of 45 mg/kg. Two weeks after STZ injection, crude (500 mg/kg) and NPs *C. speciosus* (250 mg/kg) and metformin (200 mg/kg) were administered daily by gavage for a period of 8 weeks. Results: Only NPs *C. speciosus* significantly decreased serum glucose levels versus

diabetic rats. The hypoglycemic effect of NPs *C. speciosus* was similar to the metformin effect and superior to crude *C. speciosus*. All treatment regimens significantly increased % body weight gain than diabetic rats. All regimens significantly increased serum insulin and testosterone levels. Concerning testosterone crude *C. speciosus* is superior to NPs *C. speciosus* an effect confirmed with the histopathological findings. Conclusion: A lower dose of NPs *C. speciosus* significantly ameliorated diabetes-induced hyperglycemia, body-weight loss, and testicular damage.

- 9- **Arwa M. Turkistani (2019)**. Modulatory Effect of *Echinacea Purpurea* Root Extract on Cisplatin-Induced Renal Toxicity in Rats: Antioxidant and Anti-inflammatory Pathways. International Journal of Pharmaceutical and Phytopharmacological Research, 9(5):88-96.

<https://eijppr.com/en/article/modulatory-effect-of-echinacea-purpurea-root-extract-on-cisplatin-induced-renal-toxicity-in-rats-antioxidant-and-anti-inflammatory-pathways>

Abstract: Cisplatin (CISP) is a potent chemotherapy antineoplastic drug. Severe adverse effects are the major hampered for prescribed CISP. This study aims to evaluate the modulatory effect of *Echinacea purpurea* root extract (EPRE) in CISP-induced renal toxicity, with underline the mechanisms. This research conducted on forty male rats that classified into four equal groups. Rats received orally EPRE (500 mg/kg) either separately or in combination with single intraperitoneal (IP) injected of CISP (7.5 mg/kg-1). Rats were sacrificed after 7 days from CISP injection. Renal toxic pretreated (EPRE+CISP)group received orally EPRE for three weeks, on the day 21th receives a single IP injection of CISP. After 28 days, administration EPRE (500 mg/kg) did not alter renal function markers, while had antioxidant and anti-inflammatory effects, thus conformed its safe usage. However, EPRE (500 mg/kg) combined with CISP had a significant protective role against the damage in renal as evidenced by significantly decreased CISP-induced elevates in serum renal function markers and changes in an ionic electrolyte (Na⁺ and K⁺). Additionally, it significantly restored renal antioxidant status and significantly decreased serum inflammatory cytokines. Rat's renal in EPRE (500 mg/kg) combined with CISP showed no injury compared with the CISP group. In conclusion, EPRE has protected and ameliorated the nephrotoxicity induced by CISP, thus provides an encouraging way for cancer patients receiving CISP to overcome some of its undesirable side effects.

- 10- **Hala A. H. Khattab** , Said S.Moselhy and Alaa A.O. Aljafri (2019). Olive Leaf Extract Protect Diabetic Retinopathy in Diabetic Rats: Antioxidant and Advance Glycation End Products Pathway. International Journal of Pharmaceutical and Phytopharmacological Research, 9(5):57-67.

<https://eijppr.com/en/article/olive-leaf-extract-protect-diabetic-retinopathy-in-diabetic-rats-antioxidant-and-advance-glycation-end-products-pathway>

Abstract: Diabetic retinopathy (DR), a major microvascular complication of diabetes mellitus (DM). Long-term hyperglycemia-induced irreversible damage in the retina, leading to DR. Olive leaf extract (OLE) has several health benefits. This research aimed to assess the protective effect of OLE against DR on streptozotocin (STZ)-induced DM in rats with underline antioxidant and protein glycation mechanisms. Diabetes induced in rats via injection with STZ intraperitoneal (i.p.). OLE (200 and 400 mg/kg/day) was given orally for 6 weeks and compared with Metformin (MT), as a reference drug. Change in body weight (BW), serum glucose and lipid profile levels were determined. Antioxidant status and advanced glycation end products (AGEs) biomarkers in retina tissue were measured. The changes in retina tissue in the different groups were examined under the microscope. Significant decrease in BW and increases in glucose, lipids, retina oxidative stress and AGEs levels compared with the control group. Administration of OLE (400 mg/kg) and MT reversed these parameters significantly compared with DM rats. In histology retina tissue showing focal abnormal vascularization of the ganglion layer with vacuolated cells with congested blood capillaries in different layers of the retina especially the ganglion layer, while OLE(400 mg/kg) and MT prevent most of these changes. Therefore, OLE displays a major role as an antihyperglycemic and antihyperlipidemic, also it possesses curative role against DR, through its antioxidant and inhibition of AGEs in DM rats.

- 11- Asmahan T. and **Reham A. Arafat (2019)**. Ameliorative Effect of Wheat Germ Oil in Potassium bromate Induced Biochemical and Histopathological Changes in Male Rat's Heart. International Journal of Pharmaceutical and Phytopharmacological Research, 9(5): 126-131.

<https://eijppr.com/en/article/ameliorative-effect-of-wheat-germ-oil-in-potassium-bromate-induced-biochemical-and-histopathological-changes-in-male-rats-heart>

Abstract: Potassium bromate (BRO) is a toxic substance that is used as a food additive in food. Wheat germ oil (WO) can improve lipid metabolism and reduce oxidative stress. Attributable to its high level of polyunsaturated fatty acids and vitamin E is a portion of good nutritious food. The current work was aimed to investigate the possible action of WO on the damage effects of Potassium bromate in heart tissue. Adult male rats (n=40) were equally divided into 5 groups; Control (Cont. (-)), BRO (Cont. (+)), groups 3, 4 and 5 orally given WO in doses of 150,300 and 450 mg/kg respectively. The results showed that oral gavage of wheat germ oil at three hundred and four hundred and fifty mg/kg.b.wt., two-intoxicated rats with BRO for four weeks significantly reduced cholesterol, triglycerides, lipid profile, and serum inflammatory cytokines against the Cont. (+) group. The histopathological examination of heart tissue confirmed these results. The current study indicates that oral administration of WO induces potent cardioprotective in rats intoxicated by BRO, this effect could be explained by WO antioxidant and anti-inflammatory properties.

12- **Noha M. Almoraie (2019)**. The Role of Ipomoea Batatas Leaves Extract on the Treatment of Diabetes Induced by Streptozotocin. *Pharmacophore*, 10(3):14-20.

<https://pharmacophorejournal.com/storage/models/article/sVkJ5iGvNcr5bAH8tq5qrZwGv6VmmY954AKSBNpY9xaMeNLp50nrS9He8yg7/the-role-of-ipomoea-batatas-leaves-extract-on-the-treatment-of-diabetes-induced-by-streptozotocin.pdf>

Abstract: Diabetes mellitus (DM) is a disease that is common worldwide. The current work was conducted to assess the possible antidiabetic activity of Ipomoea batatas Leaves extract (IBLE) in streptozotocin (STZ) - induced diabetic rats. Fifty male adult albino rats were distributed to five groups (10 rats each) and were studied as following scheme for 4 weeks, group (I) normal control (cont. (-)), group (II) diabetic control rats were given distilled water daily by gastric incubation (cont. (+)), group (III) diabetic rats were treated orally with Gliclazide (GZ) (10 mg/kg), groups (IV) and (V) diabetic rats were treated orally with IBLEat (200 mg/kg) and IBLE (200 mg/kg) combined with GZ (10 mg/kg), respectively. Blood samples and pancreas were collected at the last day of the experimental period for biochemical parameters estimation as well as the histopathological examination. The IBLE administration to diabetic rats reduced significantly blood glucose (BG) level, MDA and antiinflammatory cytokines (IL-1 β and - TNF- α). On the other hand, the levels of insulin (INS), GSH and SOD were significantly increased compared with cont. (+). Moreover, the extract showed significant amelioration in pancreatic cells structure. These findings demonstrated that IBLE possess antidiabetic properties thus suggesting its beneficial effect in the DM treatment.

13- **Noha M. Almoraie (2019)**. The Effect of Walnut Flour on the Physical and Sensory Characteristics of Wheat Bread. *International Journal of Food Science*, 2019(5676205): 7 pages.

<https://www.hindawi.com/journals/ijfs/2019/5676205/>

Abstract: The study was carried out to demonstrate the effect of walnut flour enhancement on the physical, nutritional, and sensory quality of bread. Walnut flour was prepared by soaking, deshelling, oven drying, and sieving whole walnuts. The wheat flour was supplemented with walnut flour by 0, 20, 30, 40, and 50% of the total amount. Standard procedures were taken to estimate the proximate composition of wheat and walnut flour and bread samples. A comparison between the control and supplemented bread was made, where the physical characteristics (weight, volume, and specific volume) and sensory quality were checked. The enhanced bread, where the percentage was between 20 and 50%, appeared to have a significant increase in protein, fat, linoleic acid, and α -linolenic acid and a decrease in carbohydrate and fibre values. Increased walnut flour replacement showed that physical properties, loaf volume and specific loaf volume, have declined. The sensory attributes between the unsupplemented and supplemented bread showed major differences. As an outcome, substituting 30% walnut flour gave the best overall quality of bread acceptability.

- 14- Sadeq Anees Uddin Serdar, Mohamed Hussein Fahmy Madkour, **Amani Aliwi Alrasheedi**, Mazhar Hayat, Ijaz Ahmad (2019). Aflatoxins exposure: a big economic, environmental and health concern. International Journal of Biosciences, 15(6):218-229.

<https://innspub.net/ijb/aflatoxins-exposure-big-economic-environmental-health-concern/>

Abstract: Aflatoxin is one of the highly toxic metabolite produced by different species of fungi, growing in susceptible agricultural commodities. These fungi infect many crops, food items dry fruits, milk and milk made products which poses enormous economic losses and health problems worldwide. Aflatoxins are mycotoxins generated by two species of *Aspergillus*, a fungus found, especially hot and humid climates. Among known aflatoxins only six of these AFB1, AFB2, AFG1, AFG2, AFM1, and AFM2 are usually found in staple foods. The most toxic among all types is aflatoxin B1, produced by both *A. flavus* and *A. parasiticus*. Many studies around the world have been conducted to develop methods for AFs detection and quantifications, and to assess the potential health risks of food contamination with AFs in order to reduce the health, environmental and economic burdens. AFs occurrence, toxicology, chemistry, health and environmental hazards as well as its economic burdens, their exposure control and management have been briefly discussed in this article. The available literature proved that local climatic and weather conditions in Jeddah supports the fungal growth, which may infect crops, food items, and milk products ultimately posing enormous economic losses and health problems. So there is big vulnerability of susceptible foods commodities contamination from AFs in the local markets in KSA. Although there are many studies that prove the presence of AFs in food commodities in KSA, yet there is no study to assess the potential risks of dietary exposure of AFs. As aflatoxins are known to be potential carcinogens, so their exposure via food and or feed need to be strictly regulated and controlled which otherwise may result in severe health, environmental and economic risks.

- 15- Al Amri, T., Bahijri, S., Al-Raddadi, R., Ajabnoor, G., Al Ahmadi, J., **Jambi, H.**, Borai A & Tuomilehto, J. (2019). The Association Between Prediabetes and Dyslipidemia Among Attendants of Primary Care Health Centers in Jeddah, Saudi Arabia. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, 12, 2735.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6935271/pdf/dms0-12-2735.pdf>

Abstract: Introduction: Early detection and treatment of dysglycemia including diabetes and prediabetes is demonstrated to improve disease outcomes and prevent complications. Objective: To assess the association of prediabetes with lipid metabolism disorders to clarify whether systematic screening for prediabetes should be proposed for individuals with dyslipidemia. Material and Methods: A cross-sectional study design, employing a stratified two-stage cluster sampling method recruited non-diabetic adults (age ≥ 18 years) from attendees of Primary Health Care (PHC) centers in Jeddah. Anthropomorphic measurements, demographic and clinical information were taken, and blood pressure was measured. Fasting blood sample was obtained for the measurement of plasma glucose (FPG), glycated

hemoglobin (HbA1C), and lipid profile. Plasma glucose was estimated 1 hr after the ingestion of 50 g glucose (1h-OGTT). Prediabetes and dyslipidemia were defined according to international guidelines. Demographic and clinical factors of subjects with prediabetes, and those with normoglycemia were compared. Multiple logistic regression analysis was used to adjust for confounding factors. Results: A total of 613 individuals were included with a mean age (\pm SD) of 32 ± 11.8 years, and 54.8% being female. Prediabetes was detected in 28.7%, and dyslipidemia in 54.2% of participants. After adjusting for age, an association was found for high low-density lipoprotein cholesterol (LDL-C) and prediabetes based on any definition. After adjustment for body mass index (BMI), the association was retained for any type of dyslipidemia and in particular high LDL-C. After adjusting for both age and BMI, a significant association was found only between high LDL-C and prediabetes based on any definition (OR, 95% CI=1.50, 1.02–2.19, P= 0.037). Conclusion: Even though high LDL-C is associated with an increased probability of prediabetes, a recommendation for universal screening of dyslipidemic patients requires further cohort studies.

- 16- Al-Raddadi, R., Bahijri, S. M., **Jambi, H. A.**, Ferns, G. and Tuomilehto, J. (2019). The prevalence of obesity and overweight, associated demographic and lifestyle factors, and health status in the adult population of Jeddah, Saudi Arabia. *Therapeutic Advances in Chronic Disease*, 10, 2040622319878997.

<https://journals.sagepub.com/doi/full/10.1177/2040622319878997>

Abstract: Background: Obesity is a risk factor for many chronic diseases, and its prevalence and trends vary among populations. Saudi Arabia shows a greater rise in prevalence than many other countries. We aimed to study the association between several chronic disorders, demographic, and lifestyle factors with increased body mass index (BMI) in the adult population of Jeddah. Methods: Data were obtained from a door-to-door cross sectional study. A three-stage stratified cluster sampling technique was adopted. Individuals in selected households agreeing to participate were interviewed to complete a predesigned questionnaire covering demographic and lifestyle variables, medical history, and family history of chronic diseases. This was followed by anthropometric and blood pressure measurements. A random capillary plasma glucose (RPG) was measured, followed by further testing using fasting plasma glucose and glycated hemoglobin (HbA1c) to verify whether participants were normal, diabetic, or prediabetic. Multiple logistic regression analyses were used to adjust for confounding factors. Results: A total of 1419 individuals were included in the study: 667 men and 752 women. The prevalence of overweight and obesity was 35.1 and 34.8%, respectively, in men, and 30.1% and 35.6%, respectively, in women. Both overweight and obesity increased in prevalence to 60 years of age, and decreased in the oldest age group in both sexes. After adjusting for age, risk of obesity in men was increased with having a postgraduate degree [odds ratio (OR), 95%CI = 2.48, 1.1–5.61] and decreased with increased physical activity (OR, 95%CI = 0.49, 0.26–0.91). Risk of prediabetes and diabetes was

increased in obese women (OR, 95%CI = 2.94, 1.34–6.44, and 3.61, 1.58–8.26 respectively), that of hypertension in obese men (OR, 95%CI =2.62, 1.41–4.87), and that of dyslipidemia in both sexes (OR, 95%CI = 2.60, 1.40–4.83 in men, and 2.0, 1.01–3.85 in women). A family history of dyslipidemia was associated with reduced risk of obesity among women (OR, 95%CI = 0.33, 0.12–0.92), whereas, in people with above normal weight (BMI \geq 25), there was increased risks of prediabetes, diabetes, and dyslipidemia among women (OR, 95%CI = 2.50, 1.21–5.17; 3.20, 1.45–7.03, and 1.88, 1.02–3.49, respectively), and of hypertension among men (OR, 95%CI = 1.80, 1.00–3.23). Conclusions: The prevalence of overweight and obesity in the Saudi population remain high, indicating ineffectiveness or lack of preventive measures. Risk of prediabetes, diabetes, dyslipidemia, and hypertension increased with increasing BMI, with some sex differences in these associations.

- 17- Essra Khaled Feddah, **Maha Ahmed Hijazi** and Magda M. Aly (2019). Shelf-stability of Gluten Free Cakes Produced from Quinoa Flour and Chia Gel. Journal Of Pharmacy And Biological Sciences, (14), PP 07-12

<http://www.iosrjournals.org/iosr-jpbs/papers/Vol14-issue3/Series-2/B1403020712.pdf>

Abstract: Bakery products, particularly cakes, represent one of the most consumed foods around the world. The development of gluten-free cakes with the same flavour and texture properties similar to the conventional wheat flour may be an interesting objective. In the market there is a challenge in increasing shelf life for glutenfree cakes, so the aim of this study was to assess shelf-stability of new formulations cupcake. Cake samples were prepared by replacing quinoa flour with wheat flour and chia mucilage gel with shortening at varying levels (0%, 25%, 50%, and 100%). The cake samples stored at 4, 20 and 37°C for 8 days and analysed every two days. Microbial contents were determined using serial dilutions method on Nutrient agar medium for bacteria. Mold and yeast were detected on Potato-Dextrose (PDA) Agar. The results showed that the microbial, mold and yeast contents didn't appear at 4, 20 or 37°C up to 6 days for all the examined cakes. So, the cake that prepared by replacing quinoa flour with wheat flour and chia mucilage gel with shortening at varying levels (0%, 25%, 50%, and 100%) are safe and ready to eat when the storage temperature is (25 \pm 2°C).

- 18- **Mouminah, Haneen H.** and **Aljehany, Buthaina M.** (2019). “Effect of Cocoa Powder and its Extracts on Lipid Profile, Oxidative Enzyme and Liver Function in Obese Rats”. World Journal of Dairy & Food Sciences: 14 (1): 71-78.

<http://docplayer.net/163149844-Effect-of-cocoa-powder-and-its-extracts-on-lipid-profile-oxidative-enzyme-and-liver-function-in-obese-rats.html>

Abstract: The present study aims to investigate the effects of cocoa powder *Theobroma cacao* L., cocoa water extract and cocoa ethanolic extract on lipid profile, lipoprotein, oxidative enzymes and liver functions in obese rats. Rats supplemented with cocoa powder or

cocoa extracts had lower serum total lipid (TL), triglyceride (TG), total cholesterol (TC), low density lipoprotein (LDLc), very low density lipoprotein (VLDLc), atherogenic index (AL), malondialdehyde (MDA), alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP) and glucose than obese rats. Cocoa powder or cocoa extracts supplements had higher Superoxide dismutase (SOD), glutathione peroxidase (GSH) and catalase activities than obese rats. Cocoa water extract and cocoa powder were more effective in reducing MDA than ethanolic extract. In conclusion cocoa (*Theobroma cacao* L.) and its extracts enhanced lipid profile, lipoprotein, oxidative enzymes and liver functions of obese rats.

- 19- Nisreen G. Alharbi and **Heba A. Sindi** (2020). Effect of Doum (*Hyphaene Thebaica*) Fruit Water Extract on hypercholesteremic Rats. *Life Science Journal*, 17(3):16-27]. ISSN: 1097-8135 (Print) / ISSN: 2372-613X

http://www.lifesciencesite.com/ljs/ljsj170320/02_36083ljsj170320_16_27.pdf

Abstract: Background: (*Hyphaene thebaica*) Doum water extract (DWE) contained important active compounds, such as phenolic and flavonoids that work as an antioxidant which help to control hyperlipidemic. Aims: The study aims to compare between the effect of DWE and (Statins) hypercholesterolemia medication on hypercholesterolemic rats after 4 weeks of treatment. Methods: Fifty-six male albino rats (160 –180 g) were divided into 7 groups, each group consisted 8 rats. Group (1) Control negative, Group (2) were Control positive groups which fed with high cholesterol diet (HCD), Groups (3) to (7) fed HCD and treat w/wo (Atorvastatin) at (40 mg / kg of body weight) and doum water extract at doses of (20, 40mg/kg b. wt). Body weight gain% (BWG %), relative weight of liver, serum levels of total cholesterol (TC), triglycerides (TG), lipoproteins fraction, and histopathological examination of liver were studied. Results: The results showed that, BWG% for hypercholesterolemic rat fed with DWE at two dosages (20, 40 mg/ kg) for four weeks was increased compared to control positive group. DWE significantly ($p < 0.05$) decrease total cholesterol, triglycerides and LDL concentrations compare to control positive group. Values of HDL concentration were significantly increased in all treated groups compared to control positive group. As well as a significant ($p < 0.05$) reduction of liver weight at two dosages (20, 40 mg/ kg) by (14.79%) and (7.30%) respectively, than to control positive group. Histopathological analysis of liver section of rats that treated with DWE showed amelioration improvement of histological changes caused by high level of cholesterol when compared with control positive group. Conclusion: The study clearly revealed that consumption of DWE showed improvement of health status. Human studies are needed to confirm that effect on hypercholesterolemia.

20- Hayat A Alghamdi , **Amani A Alrasheedi** , Ayman I El-Kady , **Maha A. Al-Thaiban** and Shareefah A. Al-Ghamdi (2020). Elettaria Cardamom Extract Synergistically Enhancing Sorafenib-Induced Apoptosis in HepG2 Cells. International Journal of Pharmaceutical Research & Allied Sciences,

<https://ijpras.com/en/article/elettaria-cardamom-extract-synergistically-enhancing-sorafenib-induced-apoptosis-in-hepg2-cells>

Abstract: Introduction: Liver cancer is ranked as the second most common cause of death globally as a result of its poor prognosis. It can be treated with sorafenib, but its use is limited due to its toxicity and adverse reactions. Lower doses of sorafenib with other complementary agents are recommended to minimize toxicity. Cardamom seeds are one of the most common ingredients of Indian and Chinese traditional medicine, and different studies have suggested that cardamom extract can display anti-cancer activities. **Aim:** this study aims to investigate the efficiency of Elettaria Cardamom Extract (ECE) on enhancement of Sorafenib-induced apoptosis in HepG2. **Methods:** Human liver cancer cell line (HepG2) were exposed to increasing concentrations of individual and combined treatments of Sorafenib and ECE for 24 h. The viability of cells was examined using MTT Assay. Clonogenicity and cell migration assays were carried out. Reactive oxygen species (ROS) generation and mitochondrial membrane potential (MMP) level were determined by DCFH-DA and JC-1 dye, respectively. Agarose gel electrophoresis and comet examinations were carried out to estimate the DNA damage. **Results:** Combined treatment of ECE with sorafenib suppressed the proliferation, colony formation and cell migration of HepG2 cells more than the sorafenib did alone. The half maximal inhibitory concentration (IC₅₀), after 24h of incubation were 15 μ M of sorafenib and 9 and 7.3 μ M of sorafenib enhanced by 5 and 10 μ g / 100 μ l of ECE respectively. HepG2 treated cells displayed biochemical features of apoptotic cell death. The combined treatment increased the ROS production, reduced the level of MMP, increased Comet tail length and induced DNA fragmentation more than sorafenib did alone. **Conclusions:** These findings demonstrate that ECE enhanced the sorafenib effect in HepG2 cells and suggest that the ECE may be a promising agent for reducing sorafenib side effects in hepatocellular carcinoma (HCC).

21- **Hala A. H. Khattab**, Said S. Moselhy and Alaa A.O. Aljafri (2020). Olive Leaves Extract Alleviate Diabetic Nephropathy in Diabetic Male Rats: Impact on Oxidative Stress and Protein Glycation. International Journal of Pharmaceutical Research & Allied Sciences, 9(1):130-41.

<https://ijpras.com/en/article/olive-leaves-extract-alleviate-diabetic-nephropathy-in-diabetic-male-rats-impact-on-oxidative-stress-and-protein-glycation>

Abstract: Diabetes (DM) is one of the top five causes of death worldwide. Controlling glucose level is vital for protecting the complications and improving the diabetics' health. Olive (*Olea europaea* L.) leave extract (OLE) contains biologically active antioxidant phenolic compounds. This research was carried out to evaluate the effect of OLE on oxidative status and advanced glycation end products (AGEs) in DM rats. Male Wister rats (n=40, 200 ± 20 g) were divided into Group (1); Control rats and Groups (2-5); DM rats were intraperitoneal(i.p.) injected with STZ (65 mg/kg), only DM rats (fasting blood glucose >250 mg/dl) were randomly classified into DM, DM+ metformin (MT) (600 mg/kg) as reference drug, DM+OLE (200 mg/kg), and DM+OLE (400 mg/kg) groups. At the end of the experiment (6 weeks), blood and kidney samples were collected for biochemical and histopathological studies. Serum glucose, renal functions (creatinine (Cr), and blood urea nitrogen (BUN)), electrolyte ions (sodium (Na⁺) and potassium (K⁺)), as well as renal oxidative status biomarkers (nitric oxide (NO), malondialdehyde (MDA), superoxide dismutase (SOD), and AGEs) were determined. The results revealed that there were significant increases in glucose, Cr, BUN, and K⁺ with a significant decrease in Na⁺ levels, as well as significant decrease in renal oxidative stress and elevated AGEs levels compared to the control rats. Although MT treatment was more effective than OLE (400 mg/kg) in reducing glucose level, while OLE treatment was more effective than MT in reducing oxidative stress and AGEs levels. Oral administration of OLE (400 mg/kg) showed significant hypoglycemic and antioxidant effects as well as improved renal functions and inhibited AGEs levels compared to the DM rats. Also overcome most of the renal histopathological changes induced by DM. Therefore, co-administration of MT and OLE is recommended in preventing DM complications.

- 22- **Hala A.H. Khattab**, and Ebtisam T. Al-Saadoun (2020). Correlation between nutritional status and cognitive functions among elderly in social care home, Makkah Region, Saudi Arabia. *Medical Science*, 24(103): 1374-1384.

https://discoveryjournals.org/medicalsecience/current_issue/v24/n103/A52.htm

Abstract: Background: Nutrition is an essential element of healthiness in aging, the deterioration of nutritional status effects, and is affected by physiological, psychosocial and dietary changes that occur with advanced age. Objectives: This study aims to clarify the correlation between nutritional status and health-related factors, biochemical measurements, and cognitive functions of the elderly participants. Methods: A cross-sectional study in primary health home in Makkah region, KSA, it conducted for four months. After applying the inclusion criteria, fifty-three elderly selected from Taif and Makkah social care home. Participants' information collected from medical record files. In addition, we used two standardized, valid questionnaires; mini nutritional assessment (MNA) and mini-mental state exam (MMSE) by face-to-face interviews. Complete blood count (CBC), total homocysteine, vitamin B12 and folate levels analyzed. Inferential statistics Chi-square (χ^2) was used to measure the correlation and regression analysis. Results: The data revealed that only 26.41% of the participants in normal nutritional status, there were non-significant differences

between genders in MNA. There was a non-significant correlation between MNA and marital status, education level and retirement status of the participants. While, there was a significant correlation between MNA and age categories and anthropometric measurements. There was a significant correlation between MNA and the participants' walkability, hearing, vision status, oral health, and chewing problems. There was no correlation between MNA and the measured biochemical parameters, where most elderly people have poor nutritional status. There was a significant correlation between MNA and MMSE of the participants ($P < 0.001$). Therefore, effective care strategies for improving the nutritional status of the elderly are necessary for enhancing their quality of life.

- 23- **Haridy, L. A., Thaiban, M. A.** and Alsrwani, A. A. (2020). Physio-chemical Properties of Fresh, Clarified and Commercial Brands Pomegranate Juice. *International Journal of Pharmaceutical Research & Allied Sciences*, 2020, 9(1):176-190.

<https://ijpras.com/storage/models/article/jfCy9xcsac5WHKShGhzcrIJ74diPtIeWr4PbzD26mKzdNSqnp3C7CWNWu260/physio-chemical-properties-of-fresh-clarified-and-commercial-brands-pomegranate-juice.pdf>

Abstract: Background : Juice can be considered as an important and functional ingredient in food products. Pomegranate (*Punica granatum L.*) juice (PJ) consumption has been increased recently due to scientific evidence increase on its high content of health beneficial compounds. The aim of the present study is to evaluate the physio-chemical properties of fresh, clarified and commercial pomegranate juice (commercial PJ). Materials and Methods : Four commercially available (labeled A, B, C and D), and one homemade (Clarified) and fresh pomegranate juice were evaluated for their physicochemical properties including total ash, pH value, titratable acidity (TA), total sugars (T.S), total soluble solids (T.S.S) and fruit percentage. Antioxidant properties such as anthocyanin, antioxidant activity (A.A) and total phenolic compound (TPC) were examined. Results : T.S.S and T.S at ($P \leq 0.05$) were significantly higher in clarified PJ than those of all commercials and fresh juice by 19.3% and 16.9%, respectively. The control fresh PJ recorded the highest significant content of pH value (4.17 %) and lowest content of T.A% (6.4%) compared with commercial PJ sample B (32 %). TPC of commercial PJ samples B and C had 81.99 mg GAE/ml juice and 55.57 mg GAE/ml juice, respectively. The highest percentages of A.A were shown in the control fresh and clarified PJ sample as 84.5 % and 75.1%, respectively. Commercial PJ sample B recorded the highest content of anthocyanin (36.24 mg /100 ml) followed by commercial PJ samples C and D. The results ascertained that natural fresh PJ sample recorded the highest fruit percentage in juice (33.62%) followed by commercial PJ sample B and clarified PJ. Conclusion : The clarified PJ sample had the highest contents of T.S.S and total sugars than the control fresh PJ and all commercial PJ sample. Also, it was established that the control fresh PJ sample had a high antioxidant activity, fruit percentage and pH value, and low

acidity. The commercial PJ sample B also contained a high percentage of total phenolic compounds and high percentage of total anthocyanin.

- 24- **Lobna A. M. Haridy**, Soad ShakerAli and Reham K. Alghamdi (2020). Evaluation Of Possible Protective Role of Corchorus olitorius L Leaves Extract Against experimentally induced hepatotoxicity in rat using carbon tetrachloride. International Journal of Pharmaceutical and Phytopharmacological Research, 10 (1) Page 50-60.

<https://eijppr.com/storage/models/article/j4zDaLJFhlnGXH4AKP9huj7cVEwuGUdMCoWV e4IWxzXnv9uA7LDiSLh9Dk4s/protective-role-of-corchorus-olitorius-l-leaves-extract-against-experimentally-induced-hepatotoxic.pdf>

Abstract: A planned study was designed to investigate the hepatoprotective role of molokheya Corchorus olitorius L aqueous extract in experimentally-induced hepatotoxicity in rats using histological and biochemical investigations. Antioxidant contents of AECO were analyzed by DPPH and HPLC-MS method. Adult male rats (N=42) were distributed into four groups (n=6). The experiments were completed in 6 weeks. G I: control, G II: hepatotoxic model (0.5ml/kg/bw) of CCl₄ in an oily vehicle (1:1) was injected intraperitoneally (i.p) every 3 days for 14 days. G III and IV (Pre-treatment) were administrated 500 and 1000 mg of AECO / kg, b.w, respectively via gavage for 4 weeks then received CCl₄ as G II. Phytochemical analysis showed that the most predominant compounds of phenols and flavonoids cinnamic acid and myricetin, respectively. The results showed that liver enzymes (alanine transaminase (ALT), aspartate transaminase (AST) and alkaline phosphatase (ALP) significantly ($p < 0.001$) increased in CCl₄ intoxicated rats. Malondialdehyde (MDA) serum levels also increased. Gglutathione peroxidase (Gpx) serum levels were decreased compared to the control (GI). Administration of both doses of AECO prior to CCl₄ decreased serum liver enzymes and MDA levels and increased Gpx compared to the control (G II). Histopathological study supported that the two doses of AECO markedly mitigated the toxicity and preserved the histoarchitecture of hepatic tissue especially high dose (1000 mg AECO) to near-normal. In conclusion, AECO could be used as a natural liver protective food supplement for prevention of chemically induced liver toxicity, based on having radical scavenging activity due to its rich flavonoid and phenolic compounds.