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Abstract book

1: Systematic understanding of temperature-responsive recombinant protein block polymers for DDS

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Unlike synthetic and natural polymers, recombinant protein polymers are monodisperse polymers with highly controlled monomer sequence and chain length, and are expected to be new biomaterials because they can be synthesized and degraded in vivo. Among them, the elastin-like polypeptide (ELP), which changes from soluble to insoluble when heated, and the resilin-like polypeptide (RLP), which changes from insoluble to soluble when heated, have potential applications in drug delivery systems (DDS). Recently, there is a trend to apply block polymers with both elastin-like and resilin-like sequences to DDS[1,2]. However, the knowledge of primary structure and function has not been accumulated enough to design polymers with desired temperature responsiveness from the ground up. Therefore, we prepared several block polymers with ELP and RLP sequences to systematically understand the relationship between the primary structure and the temperature response. As a result, we were able to clarify the relationship between the ELP weight fraction and the temperature response (Figure 1). This finding can be utilized for the design of protein polymers with desired environmental responsiveness and may be useful for the design of DDS.

Reference : 1) P. Weber et al., Biomacromolecules, 2021, 22, 4347-4356, 2) M. Dzuricky et al., Nano Lett., 2019, 19, 6124-6132

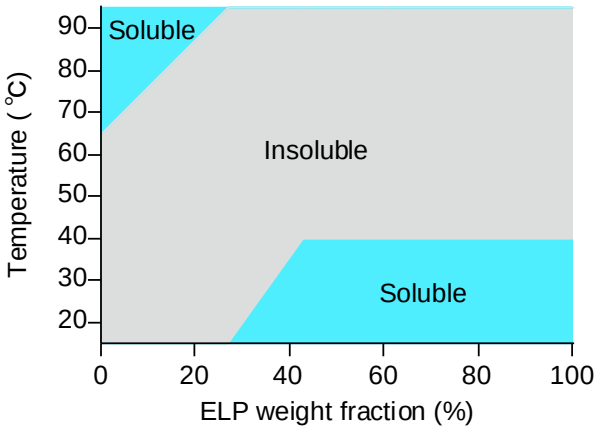


Figure 1 Relationship between temperature response and ELP weight fraction of the ELP-RLP block polymers.

2: Possible counteracting effects of zinc oxide nanoparticles on acute renal ischemia/reperfusion injury

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Abstract

Ischemia/reperfusion injury (I/RI) to the kidneys is a critical and significant side effect following kidney transplant and several cardiovascular diseases. Clinically, renal I/RI is the most common complication of acute renal failure, which is linked to lengthy hospital stays and increased mortality. The development of more specialized therapeutics to avoid and alleviate kidney injury should be aided by a deeper knowledge of the cellular pathophysiological mechanisms fundamental to the disease. It is crucial to manage this serious complication since the pathophysiology of I/R is intricate, multifaceted, and interdependent and involves hypoxia, damaging free radicals, and inflammatory reactions. The use of nanoparticles in medicine is an attractive proposition. Concerning the involvement of zinc oxide nanoparticles in various applications in biomedicine, such as anti-cancer, anti-bacterial, anti-oxidant, anti-diabetic, and anti-inflammatory capabilities, along with methods of drug delivery and bioimaging, the goal of this review is to summarize the possible protective mechanisms of zinc oxide nanoparticles to counteract acute renal ischemia/reperfusion injury.

Key words: Acute renal ischemia/reperfusion injury, Inflammation, Oxidative stress, Apoptosis, Zinc oxide nanoparticles.

3: Protective Effects of Nanoselenium on Japanese Quails Fed on Aflatoxin B1 Contaminated Diets on Performance Parameters, Hematological, Biochemical, Immunological and Pathological Studies.

Abstract:

Mycotoxins considered a destructive problem in feed and food quality to animal and human health. Nanotechnological application had been done for detection and elimination mycotoxins, recently attracted great scientific interest, mainly because of its potential benefits for poultry to control these problems. Our study aimed to investigate the toxic effects of AFB1in addition to the protective effects of nano-Se against aflatoxicosis in Japanese quails. To achieve this, one hundred twenty healthy Japanese quails, The quails were divided randomly into 5 groups containing 24 birds each. First group G1; fed basal diet (negative control) without any addition, Second group G2; fed

basal diet supplemented with 0.5 mg/kg diet nano-Se, Third group G3; fed basal diet containing 300 ppb AFB1 (positive control), Fourth group G4; fed basal diet containing 300 ppb AFB1 treated with 0.3 mg//kg diet nano-Se, Fifth group G5; fed basal diet containing 300 ppb AFB1 and treated with 0.5 mg//kg diet nano-Se. The experiment was conducted for 6 weeks. Compared to control and second group, the results revealed decrease in FI, BWG, FBW and increase FCR of quail performance. Significant decrease in Hb, PCV, RBCS, WBCS, DLC, total protein, albumin and globulin was recorded in G3 compared to G1&G2, high dose of nano-Se revealed a significant increase in these parameters compared to G3 and G4. Significant increase in AST, ALT, creatinine, uric acid, TG, total cholesterol, LDL, VLDL and significant decrease in HDL in G3 compared to G1&G2. However, the opposite was recognized in G5 compared to G3 and G4. Also, AFB1 had a determintal effect on expression of IL-1B and IL6 as an indicator for inflammation and immune status of aflatoxicated quails. Sever degenerative changes and necrosis were observed in liver, kidney and lung with 300ppb AFB1. Slight to minimal pathological changes were observed in G3 while marked improvement was achieved in G5. We concluded that high dose of nano-Se (0.5 mg/kg diet) had more protective effect than (0.3 mg/kg diet) nano-Se against toxic effects of AFB1 on growth performance, hematological, biochemical and immunological parameters besides liver, lungs and kidneys histology of quails.

Keywords: AFB1, nano-Se, performance, immunohematological, biochemical and pathology, Japanese quails.

4: Histopathological Studies on the Protective Effects of Silymarin against Cispatin-Induced Ovarian and Testicular damage in Albino Rats.

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Abstract

Objective: The aim of this study was to determine and document the protective effect of silymarin against cisplatin -induced ovary toxicity and testicular damage in male and female albino rats.

Design: Randomized controlled study.

Animal Models: The experiment was performed on 80 adult albino rats of both sexes, weighting (160 g ±20g) and (4-6) weeks old.

Procedures: rats were divided into four groups, **(Control negative group):** rats received a daily (I / P) dose of sterile physiological saline at (1 ml / kg / b. wt) and daily oral dose of distilled water at (100 ml / kg/ b.wt) for 20 successive days, **(Silymarin treated group):**

rats received a daily oral dose of silymarin at (100 mg / kg / b.wt) for 20 successive days, (**CDDP treated group):** rats received a daily (I / P) therapeutic dose of CDDP at (1mg / kg / b.wt) for 20successive days, and **(CDDP+ silymarin group):** rats received a daily oral dose of silymarin at (100 mg / kg / b.wt) and simultaneously treated with (I / P) therapeutic dose of CDDP at (1 mg / kg / b.wt) for 20 successive days.

Results: Our study recorded that CDDP treatment had deleterious hormonal and histopathological effects in the testis and ovaries of albino rats. Silymarin played a critical significant role in reducing CDDP- induced ovary toxicity and testicular damage in both sexes.

Conclusion: CDDP caused different histopathological lesions in ovaries and testis of albino rats. Silymarin protective responses in male rats were higher than in female rats. This study suggested that silymarin may lead to different responses against cisplatin-induced toxicities in male and female rats.

Running title: Silymarin Ameliorates Cisplatin-Induced Toxicities in Male and Female gonads of Albino rats.

Keywords: Silymarin, CDDP, Ovary, Testis, Rats

5: Epidemiological Investigation of *Helicobacter pylori* as an Emerging Zoonosis in Matrouh Province, North-West Egypt: A Community Based Cross-sectional Study

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Abstract

Helicobacter pylori is newly emerging bacteria and one of the most common infections worldwide with over one-half of the world is infected with this organism. A total of 250 stool samples were collected from farm animals (sheep and Camels) and humans in Matrouh Province, North-West Egypt. Samples were examined using *H. pylori* Stool Antigen Enzyme Immunoassay test and *H. pylori 16S rRNA* PCR. Statistical analysis was applied using Chi^2 and IBM SPSS Statistics 25. The overall prevalence of *H. pylori* infection in the study by HpSA and PCR were 27.6% and 24.4%, respectively. Based on the results of HpSA test, it was found that the prevalence was 12% and 26% in sheep and camels, respectively, with statistically significant association between the prevalence and locality or age of sheep. Moreover, the prevalence of *H. pylori* infection in human was 44% by

HpSA test with statistically significant association between the prevalence and gender or locality being higher in males than females with greater rural prevalence than urban. On the other hand, there was a non-statistically significant differences between *H. pylori* prevalence and sex, breed, and health status of examined animals or age, residence, and occupation of enrolled individuals. Conclusively, *H. pylori* was detected in both animal and human samples is alarming in Matrouh Province where our findings suggest that farm animals could transmit the infection to humans. Therefore, there was an urgent need for implementing a proper control program.

Key words: *Helicobacter pylori*, Sheep, Camels, Humans, Prevalence, HpSA, *16S rRNA* PCR, Zoonosis.

6: Interaction effect of Methotrexate and Aspirin on MCF7cell line proliferation: *in vitro* study

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Abstract

Methotrexate, a folic acid molecular alternative inhibiting dihydrofolate reductase (DHFR), is employed for the treatment of various types of tumors combined with aspirin; acetylsalicylic acid is a nonsteroidal anti-inflammatory drug (NSAID). The present study aimed to detect the combined effects of both medications on MCF7 cell line activity. The drug combinations of aspirin and methotrexate were tested for cytotoxicity against the breast cancer cell line MCF7 using the MTT assay. The results showed that methotrexate, aspirin, and combination drugs have potent cytotoxicity against MCF7 cells. The mean IC50 of the methotrexate-treated group was 155.7 µg/ml (range, 77.89 to 311µg/ml. However, the IC50 of the aspirin-treated group was 465 µg/ml (range, 243.3 to 888.6 µg/ml). The IC50 of combination drugs used in the CompuSyn Isobologram on MCF7 cell lines, the cytotoxicity of medications methotrexate, aspirin, and combination demonstrated a synergistic action, and combination drugs have potent cytotoxicity against MCF7 cell lines. In conclusion, the combination of methotrexate and aspirin has a potent anticancer effect.

Keywords: Methotrexate, aspirin, cell proliferation, MCF7, apoptosis

7: Effect of Various Disinfectants on Biofilm-Forming Ability of *E. coli* Isolated from Water Pipes in Broiler Farms of Giza and Dakahlia

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Abstract
In poultry, *Escherichia coli* infections lead to substantial deaths and financial losses for producers each year. This study aimed to investigate the prevalence of *E. coli* from water pipes and drinkers in broiler farms, to characterize the isolated *E. coli* strains in terms of serotypes, biofilm production degree, presence of the *adrA* gene The gene "*adrA*" encodes for the Adhesion Regulating Protein A. AdrA is a protein that plays a role in regulating the adhesion and biofilm formation of Escherichia coli bacteria., and the efficacy of various disinfectants on *E. coli* biofilms. A total of 100 swab samples were collected from drinking water pipes and drinkers from different broiler farms in Giza and Dakahlia governorates in Egypt.18 *E. coli* serogroups were identified in 50 positive samples, and the most predominant serogroup was O91, which showed the highest incidence (20%), followed by serotypes O78 (18%), and O26 (8%). Microtiter-plate test for determination of biofilm production for 50 *E. coli* isolates. PCR was done for the detection of the virulence gene *adrA* in the 13 strong biofilm *E. coli* isolates, and the results revealed that 100% were positive for the virulence gene. We then evaluated the effect of disinfectants on biofilm by using ZnO nanoparticles, acidifiers, and quaternary ammonium dioxide. This study found a high prevalence of *E. coli* in water samples, identified various *E. coli* serotypes, observed biofilm production, and determined the effectiveness of different disinfectants on *E. coli* biofilms.
Keywords: Biofilm production, *E. coli*, AdrA gene, ZnO nanoparticles, Egypt.

8: Molecular and pathological characterization of velogenic Newcastle Disease Virus causing late embryonic death in ostrich (*Struthio camelus*) in Egypt.

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A b s t r a c t
In Egypt, ostrich farming has had a great increase during the last few years. The most common problems facing ostrich farmers are a high percentage of late embryonic mortality

and low hatchability. This study was designed to survey the main causes of late in-shell ostrich embryonic death. A total of 100 freshly dead shell ostrich embryos, all of them were in the second half of the incubation period with different ages ranging from 25 to 39 days old, were received during the breeding seasons of the period from October 2018- October 2021, from different ostrich farms in Egypt, suffered from late-stage embryonic death during artificial incubation, respiratory signs and diarrhea in breeders, moreover, the surveyed ostrich farms were near to chicken farms suffered from Newcastle Disease outbreaks. Gross findings in all embryos were recorded as anasarca, severe general congestion, and hemorrhages. In this study, 66 dead shell ostrich embryos out of 100 (66%) were immunohistochemically positive for Newcastle Disease Virus. Four Velogenic Newcastle Disease Virus strains (genotype VIIb) were molecularly characterized in 4 immune-positive ND embryos (from 4 different ostrich farms in 4 different Egyptian governorates) by RT-PCR and F gene sequencing. In addition, all embryos were negative for bacterial isolation except for one vNDV positive embryo (1%) (25 days old) that was superinfected by *Citrobacter spp*. The main histopathological lesions of vNDV-positive ostrich embryos were general edema, extensive congested blood vessels, hemorrhages, necrosis, syncytial cells formation in the upper respiratory tract, and leukocytic cells infiltrations. To the best of our knowledge, this study is the first report of the Velogenic Newcastle Disease Virus that immunohistochemically and molecularly characterized dead ostrich embryos in Egypt, therefore, Newcastle Disease Virus vaccination of ostrich breeders is strongly recommended.

Keywords: Ostrich, vNDV, late embryonic death, IHC, Histopathology, F gene sequencing, vertical transmission.

9: Lipid profile and obese related genes of rats, potential therapeutic effects of Peganum harmala /ZnO nanoparticles

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Abstract

Obesity is a major global health concern and is characterized by an imbalance between food intake and energy expenditure, which causes excessive accumulation of fat in blood, adipose tissue, and liver. It is an important morbid condition for cardiovascular disorders, cancer, and fatty liver metabolic syndrome. *Peganum harmala* (*P. harmala)* finds its place in traditional medicine as an effective anti-cancer, anti-inflammatory and hypolipidemic agent. The present study investigated the effects of methanolic extract of *harmala* nanopartical (H/ZnONP) extract on the changes in serum lipid profiles, serum leptin levels and liver and kidney PPAR gene expression in high caloric diet (HCD) induced obese rats. After induction of obesity with HCD for one month to half numbers of rats. A

total number of 36 male rats were divided into two groups (obese and normal) each of which sub divided into 3 sub-groups. The main group administered orally with H/ZnONP 200 and 400 mg/kg BW/ daily for one month) while others remain as control normal and obese. After 4 weeks of treatment blood and tissue samples were collected and subjected to laboratory assay of lipid profile and leptin level in addition to expression of PPAR gene in liver and kidney. We also investigated the possible protective effect of H/ZnONP 200 and 400 mg/kg BW on liver and kidney histology. The obtained results demonstrated that H/ZnONP treatment to obese rats significantly decreased serum cholesterols, triglyceride, and LDL level while relative expression of PPAR gene in liver and kidney was significantly increased. Based on the obtained results we can concluded that H/ZnONP supplementation has potent anti-obesity in rat by improving lipid profile, enhance expression of PPAR gene in liver and kidney and improve liver and kidney histology particularly the high dose.

10: Detection of extended-spectrum β-lactamases producing *Escherichia coli* from beef in Mansoura, Egypt

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Abstract

Objective: The objective of the current study was to identify extended-spectrum β-lactamase-producing *Escherichia coli* (ESBLs) from beef meat in Mansoura City, Egypt.

Design: Randomly selected 150 buffalo meat samples were obtained from retail butcher shops located in Mansoura City, Egypt. Samples were inoculated into enriched broth media and then directly streaked on *E. coli* selective agar for selective isolation of *E. coli*. A biochemical examination was performed for the preliminary identification of *E. coli*. Suspected *E .coli* isolates were then confirmed by PCR targeting 16S rRNA. Confirmed *E. coli* isolates were tested for their susceptibility to antimicrobials by using Kirby–Bauer disc diffusion method. Additionally. *E. coli* were tested for the presence of β-lactamases (bla_{CTX}, and bla_{SHV} and bla_{TEM}) using PCR.

Results: *E. coli* was isolated from 37 out of 150 tested samples with a total prevalence of 24.66 %. *E. coli* isolates revealed a high resistant against cefotaxime and ceftazidime, and moderate resistance against amoxyclavulanic acid, while a high sensitivity of *E. coli* was displayed against meropenem and imipenem. Moreover, the tested *E. coli* (n=37) harbored ESBLs genes with percentages of 40.5% for both $bla_{CTX,}$ and bla_{SHV} and 35% for bla_{TEM}

Conclusion and clinical relevance: *E. coli* produces extended-spectrum β -lactams that were isolated from meat and contained a substantial level of antibiotic resistance genes.

To increase food processing quality and provide safe food for consumers, it is crucial to build food traceability and monitoring systems for meat and meat products.
Keywords: *E. coli*, beef, ESBL, antimicrobials susceptibility

11: Characterization of Vancomycin Resistant Enterococci (VRE) isolated from retail poultry meat

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Abstract

Antimicrobial-resistant bacteria in poultry meat threaten the public health. The present study was designed to detect the presence of *Enterococcus* species in poultry meat collected from Mansoura retail outlets with characterization of vancomycin-resistant enterococci (VRE). Thus, poultry meat samples (breast and thigh) were collected from separate grocery stores around Mansoura city, Egypt. By conventional and molecular methods, out of the total examined samples (n=120), 44 *E. fecalis* isolates have been recovered with a percentage of 36.66%. All strains were assessed for their antimicrobial susceptibility using disc diffusion method, the highest rate of resistance (100%; 44/44) was displayed to ceftazidime, streptomycin, gentamycin, and clindamycin, while, a resistance rate of 36.3%, 40.9%, 68.1% and 77.2% were displayed against ciprofloxacin, penicillin, erythromycin and vancomycin respectively. Interestingly, all isolates were exhibit multidrug resistance (MDR; Resistance to three or more antimicrobial class). Screening vancomycin -resistant strains (n= 34) by PCR for the presence of vancomycin resistance genes, *van*A was identified in 47.1% *van*B in 33.4%, *van*C1 in 14.7% and *vanC*-2 C-3 in 5.9%. By testing the ability of the isolated strains for the biofilm production by Congo Red Method, 31.8 % of the tested isolates were tested positive. Hence, standard manufacturing procedures and adequate hygiene conditions must be integrated into all phases of poultry meat preparation, production and consuming, and public knowledge should be improved.

Key words: *Enterococcus*, Poultry meat, VRE, Biofilm production

12: Alleviation of Fatty Liver by Using Soy Proteins in Rat

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Abstract

The aim of the current investigation is to determine how soy isoflavone (ISF) and genistein (GS) affects oxidative stress, IL1-ß and PPARγ signalling pathways in liver of rats and how this pathway is involved in controlling the formation of hepatic fat. The study included 60 male Sprague Dawley rats that were allocated to six groups (n = 10rats) :(I) Fatty liver was induced in rats were daily fed (60% fat energy, high fat diet (HFD) for 12 weeks ; (II) (Fatty liver + ISF group) rats were daily fed with HFD and 10 mg/Kg ISF intragastrical for 12 weeks ;(III) (Fatty liver + GS group) rats were given HFD and 16 mg/Kg GS in 0.1% DMSO once daily by intragastric tube for 12 weeks; (IV) (Normal control group) rats were fed with normal balanced diet for 12 weeks; (V)(Normal diet + ISF group) rats were fed with normal diet and 10 mg/Kg ISF intragastrical for 12 weeks; (VI) (Normal diet + GS group) rats were fed with normal diet and 16 mg/Kg GS for 12 weeks. All rats allowed water whereas rats got HFD were accompanied by 18% sucrose solution freely. Also, weight was measured weekly. At the end of the experiments lipid profile and liver function were analysed. Moreover, the levels of MDA, SOD, CAT, and GSH, and the gene expression of IL1-ß and PPARγ genes were detected. The study showed that fat content was significantly lowered in the liver of ISF and GS -fed obese rats, accompanied by a reduction in hepatocellular vacuolation when compared to the fatty liver control. In ISF and GS fatty liver treated groups SOD, CAT and GSH activities were significantly increased in comparison to the Fatty liver untreated group moreover, MDA level decreased in ISF and GS groups.IL1-ß and PPARγ expressions was downregulated in Fatty liver + ISF and Fatty liver+ GS treated rats when compared with Fatty liver one, however the results in Fatty liver+ GS treated rats was significantly Improved over ISF + Fatty liver. The study concluded that Genistein administration alleviated fatty liver through the down-regulation of PPARγ and IL-1 β and up-regulation the activity of oxidative stress marker (SOD , CAT and GSH.(

KEYWORDS: Soy isoflavone, Genistein, Oxidative stress,

13: Re-shedding Trials of *Toxoplasma gondii* Oocysts from Experimentally Infected Kittens Reference to Strain Types I, II and III; Zoonotic and Histopathological Confirm

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Abstract
Cats are the only definitive host of *Toxoplasma gondii* (*T. gondii*) that shed millions of un-sporulated oocysts. The current study aimed at evaluating the serological and histopathological potential ratio of *T. gondii* oocysts shedding and re-shedding kittens. Blood and fecal samples collected from fifty-seven un-weaned kittens from various districts of Cairo Governorate, Egypt. All kittens serologically screened for *T. gondii* using the Latex agglutination test (LAT), and fecal materials inspected daily for oocysts. Only proven seronegative un-shedding kittens employed in the three experimental re-shedding studies using the three *T. gondii* strain types II, III, and I with the third trial focusing on the ability of re-shedding with corticosteroid therapy. One kitten corresponding to each type sacrificed for histo-pathological assay and IgM/IgG serum antibodies recorded along the trials course using ELISA. The overall sero-negative percentage was 59.7%, with 35.1 and 24.6% in shedding and un-shedding ones respectively. The shedding number of oocysts /100 mg/feces scored (7, 5 and 3); (30, 15 and 7); (20, 10 and 5) corresponding and sequence to the three *T. gondii* strain types I, II and III respectively. In addition, the average IgM/IgG ELISA titers recorded significance variations sequence to the three strain types. Corticosteroids therapy stimulates re-shedding ability for the third time. The findings concluded that kittens shed oocysts at a high rate; regard shedding and re-shedding qualities as a critical component in developing oocyst-borne human and animal toxoplasmosis effects. Strong protection against vaccinated cats are required, as is close interaction between cats and farm animals.

KEYWORDS
Toxoplasma gondii strains, kittens, Shedding and re-shedding, Histopathology, ELISA.

14: Molecular typing of virulence and antimicrobial resistance genes with mutation tracking of *gyr*A gene of fluoroquinolone-resistant strains of *Campylobacter* isolated from broiler chickens.

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Abstract

Campylobacter is the most common bacterial cause of gastroenteritis globally. A total of 182 fully identified strains of *Campylobacter* species (42 *C.coli* and 140 *C.jejuni*) collected from 6 broiler farms were subjected to studying the antimicrobial resistance pattern and molecular typing of virulence (*cad*F, *ctd*A, *dna*J *waa*C,*iam*, and *fla*) and antimicrobial resistance genes (bla_{OXA-61}, *gyr*A, *tet*A, *tet*O, and IR) with sequencing of *gyr*A region of one strain of fluroquinolones resistant *C.coli* and *C.jejuni*. The identified isolates were highly resistant to erythromycin and sulfamethoxazole-trimethoprim. Furthermore, both meropenem and imipenem were effective against the recovered isolates. The tested *C.jejuni* and *C.coli* strains had 100%, 83.3%, and 83.3% prevalence of *cad*F, *ctd*A, and *dna*J virulence genes, respectively, while *waa*C, *iam*, and *fla* genes couldn't be detected. The bla_{OXA-61} resistance gene was found in all of the *Campylobacter* spp. examined. Furthermore, *gyr*A, *tet*A, *tet*O, and IR resistance genes were found in 100%, 83.3%, 83.3%, and 66.7% of the retrieved *C. jejuni* strains, respectively. Likewise, resistance genes were found in 83.3%, 83.3%, 83.3%, and 66.7% of the retrieved *C.coli* strains, respectively. Approximately 58% (7/12) of the *Campylobacter* spp. recovered were MDR. Furthermore, 50% (3/6) of the *C. jejuni* strains recovered were MDR, while 66.7% (4/6) of the *C.coli* isolates recovered were MDR with MARI(0.22-0.55). For detection of mutations of the *gyrA* gene, the sequence data of two isolates (*C. jejuni* and *C.coli*) were analyzed against the reference sequence on the gene bank where the *C.jejuni* strain had six mutations, while the *C.coli* strain had twenty-three. The current findings suggest that MDR Campylobacter strains in poultry may be able to transmit highly virulent *Campylobacter* as a foodborne pathogen.

Keywords: Broilers; Resistance genes, Antimicrobials, C. coli, C. jejuni

15: Genetic analysis of *mec*A gene of Methicillin-resistant *Staphylococcus aureus* from human, canine and feline origins

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Abstract

The aim of the present study was to determine the genetic relatedness between Methicillin-resistant *Staphylococcus aureus* (MRSA) isolated from pet animals and human. In that context, 561 swabs were collected from dogs (n=238) and cats (n=323). In addition, 30 MRSA positive isolates from Qasr Elainy hospital, from different patients were also included. The collected samples were subjected for bacteriological examination for isolation of *S. aureus*. The recovered *S. aureus* isolates that were resistant to oxacillin and cefoxitin were tested for the presence of *mec*A*, mec*C, *spa*, and *nuc* genes by PCR, followed by a sequence analysis of the *mec*A gene in seven selected isolates. Out of 238 swab samples collected from dogs and 323 swab samples collected from cats, 13 (5.46%) and 8 (2.48%) isolates respectively were confirmed to be MRSA. In addition, the 30 human isolates were all categorized as MRSA. The *mec*A gene was successfully identified in all isolates from dogs, cats and human, while *spa* was harbored by 13, 4 and 30 isolates from dogs, cats and human respectively. Furthermore 13, 4 and 23 isolates from dogs, cats and human were positive for the *nuc* gene. And, *mec*C was not identified from all examined isolates. The phylogenetic analysis of the *mec*A gene sequence in seven selected MRSA isolates demonstrated a high degree of similarity among isolates originating from dogs, cats, and humans. This study confirms the zoonotic spread of *S. aureus* and suggests that dogs and cats are probably contributing to the spread of MRSA to human.

Key words: MRSA- *mec*A*, mec*C*, spa, nuc, Staphylococcus aureus*

16: Virulotyping and antibiograms of pathogenic Escherichia coli isolated from calves suffering from diarrhea

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Abstract

Escherichia coli is an important cause of diarrhea in calves and has negative economic effects on the livestock industry worldwide due to high mortality and reduced growth rate. The present study was aimed to investigate the prevalence of E. coli in 120 fecal samples from diarrheic mixed-sex neonatal calves, molecular detection of virulence genes, and antimicrobial resistance testing. The high occurrence of E. coli (90/120; 75%) was detected in diarrheic calves. The molecular detection of virulence genes (*iron, papc, asta, iuta, omp, hyl* and *iuc*) showed that the high occurrence of *ast*A (78.8%), *iucD* (66.6%), and *pap*C (64.4%) genes in examined strains, while only 19 strains devoid of virulence genes. Furthermore, antimicrobial susceptibility testing of *E. coli* isolates showed absolute resistance to ampicillin (100%), followed by streptomycin (95.5%), tetracycline, sulfonamides, gentamycin and chloramphenicol (77.7% each). In the other hand, strains revealed high rates of susceptibility to ciprofloxacin (80%) and enrofloxacin

(77.8%). The multidrug-resistant (MDR) E. coli strains were determined as 77.7% (70/90) and the most identified antimicrobial resistance patterns in 31 strains was C, S, CN, N, TET, AM, SXT**.** Also, the identified antibiotypes had MAR index values ranged from 0.1 to 0.9. The results of current study indicate the importance of routine monitoring of E. coli isolated from diarrhetic calves to reduce the transmission to humans and animals as well as to select the most appropriate antibiotics. The antibiograms in our study emphasizes the risks associated with the random use of antibiotics.

Keywords: Antibiograms, Pathogenic E. coli, diarrheic calves, Virulotyping

17: Dose dependent Cytotoxicity effect of Doxorubicin on breast cancer cell line (AMJ13) proliferation: in *vitro* study

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Abstract

Breast cancer continues to be the most prevalent cancer and the main cause of death for women worldwide and in Iraq, accounting for the majority of reported infections in 2018. Breast cancer is a complicated condition with various subcategories that are associated with a variety of medical outcomes. The prognosis for individuals with breast cancer has significantly improved due to breakthroughs in cancer therapy, but it is still not completely adequate. Doxorubicin was therefore employed in our research as an anticancer agent. The mutant strain of Streptomyces paucities var. caesius produces the broad-spectrum anthracycline antibiotic, Dox is a powerful antineoplastic medication that effectively treats various types of cancer, including breast cancer.

The purpose of the current investigation was to identify the dose-dependent effect of doxorubicin on the proliferation of the AMJ13 cell line. The AMJ13 breast cancer cell line was used to investigate the cytotoxicity of the medication doxorubicin. The median inhibitory concentration (IC50) was calculated using the Methyl thiazolyltetrazolium (MTT) assay. Doxorubicin's IC50 value, which ranged from 162.2 to 308,3, was 223.6. Doxorubicin inhibited the proliferation of AMJ13 cells to a greater or lesser extent at concentrations of 1000, 500, 250, 125, 62.5, and 31.2 g/ml (58.8%, 46.4%, 32.3%, 23.8%, 11.3%, and 0.896%). respectively.

The percentage of cytotoxicity (CT) After 72 hours of treatment, doxorubicin inhibited MCF7 cell growth in a dose-dependent manner, with a CT% of 90% at a dosage of 50 M. To sum up, doxorubicin displays strong cytotoxicity against the AMJ13 breast cancer cell line.

Keywords: Iraq, Breast cancer, IC50, DOX, MTT

17: Evaluation of the effect of spirulina platensis on some biochemical parameters in broiler chickens.

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Abstract

Objective: This study was conducted to know influence of of Dietary spirulina platensis on some biochemical parameters and meat quality in broiler chickens

Design: experimental study

Animals: One hundred one-day-old broiler chicks. chickens of mixed sex (as hatched) were purchased from a local hatchary at Gamasa city were assigned randomly to three treatment groups, with four replications of 10 birds per group.

Results: From the present study we can conclude that It could be concluded that, dietary supplementation with spirulina dry leaves powder with 0.5 or 1 or 2 g/kg diet as alternatives growth promoters may enhancing productive performance of broiler without any adverse effect on their physiological responses,gut integrity, and immunity of broiler birds *S. platensis* increased the number of leukocytes, erythrocytes and decreased the mortality rate. These bioactive compounds have numerous biological activities such as antioxidant, antiviral anti-inflammatory,hepatoprotective, immunostimulatory, antimicrobial.

Key words: spirulina platensis; Broilers; ant oxidative activities; Growth performances.

18: Prevalence, identification and antibiotic susceptibility profiles of *Enterococcus faecium* and *Enterococcus faecalis* isolated from chicken carcasses retailed in Mansoura city

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ABSTRACT

Objective: To detect the prevalence of *Enterococcus faecium* and *Enterococcus faecalis* in investigated chicken carcasses and characterize their antibiotic susceptibility profiles.

Design: Observational study.

Procedure: A total of 65 freshly slaughtered whole chicken carcasses were collected from different poultry shops distributed in Mansoura city. All samples were individually packed in a clean polyethylene bag then transported without delay in an ice box to the laboratory of Meat Hygiene, Safety and Technology, Faculty of Veterinary Medicine, Mansoura University, wherein the microbiological analyses were done.

Results*: Enterococcus* species were isolated from 84.6% of the tested chicken carcasses in counts ranging from 1×10^2 to 8.7×10^4 cfu/cm^2 with a mean count of 9×10^3 cfu/cm^2. Of the *Enterococcus* species identified, *E. faecium* and *E. faecalis* represented 16.7% and 23.1%, respectively. The antibiotic resistance profiles of tested *E. faecium* and *E. faecalis* showed high resistance rates of 100% and 100%, 100% and 84.6% and 72.2% against kanamycin, clindamycin, and colistin, respectively, but conversely, lower resistance rates of 15.4% and 11.1%, 7.7% and 5.6, and 15.4% and 5.6% were detected towards linezolid, vancomycin, and tigecycline, respectively. Of the *E. faecium* and *E. faecalis* isolates tested, 69.2% and 61.1% were multidrug resistant with average MAR index of 0.497 and 0.412, respectively.

Conclusion and clinical relevance: The high incidence of *Enterococcus* spp. contamination detected in tested chicken carcasses can constitute a potential risk for human public health. Therefore, special programs are urgently needed to control the contamination of chicken carcasses in poultry shops with *Enterococcus* spp.

Keywords: Enterococci, Chicken carcasses, Antibiotic resistance.

19: Antimicrobial Resistance of Salmonella Species Isolated from some food products and Human in Alexandria, Egypt

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Abstract :

This study was carried out in Alexandria Province for a period of 12 months from November 2021 to October 2022 in the laboratory of Animal Hygiene and Zoonoses Department, Faculty of Veterinary Medicine, Alexandria University for isolation and molecular identification of Salmonella from some food products of animal origin as well as humans. In addition, the antimicrobial susceptibility testing of the identified bacterial strains was assessed. A total of 450 food samples, comprising chicken paneeh, chicken burger, chicken luncheon, minced meat, beef burger, and kariesh cheese (75 each), were randomly gathered from. In addition, a total of 100 human stool samples have been

obtained from 60 diarrheal individuals and 40 apparently healthy ones. Isolation of Salmonella from food samples on XLD clarified that the recovery rate was 12, 8, 5.3, 13.3, 9.3 and 5.3 % for Chicken paneeh, Chicken burger, Chicken luncheon, Minced meat, Beef burger and Kariesh cheese, respectively (40 isolates) while biochemical identification showed that the detection rate was 9.3, 5.3, 5.3, 8, 5.3 and 4% from the same samples, respectively (28 isolates only). Moreover, the molecular identification revealed the detection of 11 isolates only. Finally, the serological identification of 11Salmonella isolates clarified the presence of S. Enteritidis, S. Haifa, S. Inganda, S. Tamale, S. Typhimurium and S. Shangani with various rates. Antimicrobial susceptibility of Salmonella strains (n=11) isolated from food products revealed that Ciprofloxacin was the most effective antibiotic against the tested isolates (90.9 %) followed by Doxycycline (72.73 %) while Cephalexin was the least effective antibiotics as it was noticed that 100% of isolates were resistant. On the other hand, Isolation of Salmonella from the stool samples on XLD (43 isolates) clarified that the recovery rate was 53.3 and 27.5 % for diarrheic and apparently healthy individuals, respectively while biochemical identification tests showed that the detection rate was 25 and 10 % for diarrheic and apparently healthy individuals, respectively (19 isolates only). In addition, the molecular identification of isolates revealed the detection of 16 isolates only. Finally, the serological identification of Salmonella isolates (n=11) recovered from food products clarified the presence of S. Enteritidis, S. Haifa, S. Inganda, S. Typhimurium, S. Montevideo and S. Tsevie with various rates. Finally, antimicrobial susceptibility of Salmonella strains (n=11) isolated from stool samples revealed that Vancomycin and Doxycycline were the most effective antibiotics against the tested isolates (93.75 %) while it was noticed that 100% of isolates were resistant to the remaining antibiotics (Ampicillin, Cefotaxim, Cephalexin, Ciprofloxacin, Penicillin G, Streptomycin and Tetracycline).

Key words: Antimicrobial Resistance, Salmonella, Food products, Human

20: Early Post-Hatching Development of the Grass Carp Pancreas

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Abstract

The pancreas is a mixed gland that performs indispensable roles in digestion and glucose uptake. Grass carp (*Ctenopharyngodon idella)* is a cyprinid fish of aquacultural, medical, and research importance. Knowledge about the early post-hatching development of grass carp pancreas is lacking. In the present study, developmental features of grass carp pancreas were studied at 1-day post-hatching (1 dph), 4 dph, 10 dph, and 20 dph using histological and histochemical techniques. The pancreas of grass carp displayed

progressive developmental changes during the studied period. At 1 dph, the pancreatic primordium was located dorsal to the gut and caudal to the hepatic primordium. Zymogen granules were detected as early as 4 dph and appeared clearer onwards, suggesting initiation of pancreatic digestive activity by this age. At 10 dph, the pancreas appeared in close contact with the liver and spleen. At 20 dph, the pancreas significantly increased in size, infiltrated by patches of adipose tissue, and housed a large number of pancreatic acini containing well-developed zymogen granules within the apical portions of their cytoplasm. Clustered endocrine cells were detected among pancreatic acini at 20 dph. The present study reports age-related structural changes in the pancreas of grass carp during early post-hatching life and will help to understand the pancreatic biology of the studied species.

Keywords: Development, Grass carp, Histochemistry, Pancreas, Zymogen granules.

21: Prevalence, antibiotic sensitivity testing and molecular characterization of virulence and antimicrobial resistance genes in *Clostridium perfringens* in fish

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Abstract

Fish is one of the most widely advertised foods, and Egypt is now recognized as a significant global fish producer. Human and animal intestinal illnesses and significant histotoxic illnesses are caused by foodborne microorganisms as *Clostridium perfringens* (*C. perfringens*). This study was directed to monitor the prevalence, antibiotic susceptibility testing, detection of some virulence and antibiotic resistance genes of multidrug-resistant *C. perfringens* recovered from fish. A total of 250 samples were collected from gills and intestine of Catfish, Tilapia and Dennis). Bacteriological examination was conducted, the obtained *C. perfringens* strains were tested for antibiogram, PCR screening of virulence and antibiotic resistance genes. The investigated samples showed *C. perfringens* prevalence of 58%. *C. perfringens* isolates were resistant to several antibiotics as clindamycin (90%), cefprozil (80%), novobiocin (80%), aztreonam (80%) and erythromycin (80%). While, isolates were sensitive to nalidixic acid (90%), ofloxacin (90%), chloramphenicol (90%) and rifampicin (80%). Multidrug-resistant (MDR) *C. perfringens* was detected in 80% of tested strains. PCR proved that the obtained *C. perfringens* strains were carrying the virulence genes: *cpa*, *cpb* and *cpe* in a prevalence of 60%, 40% and 10%, respectively. As well, *bla* and *erm*B antibiotic resistance genes were detected in *C. perfringens* strains in a prevalence of 100% for both genes. In conclusion, *C. perfringens* isolated from fish was multidrug- resistant (MDR) bacteria and was

harbored *cpa*, *cpb* and *cpe* virulence genes and *bla* and *erm*B antibiotic resistance genes. The development of MDR *C. perfringens* is conceived as a public health threat.

Key words: *Clostridium perfringens*, antibiotic susceptibility testing, virulence, antibiotic resistance genes, PCR.

22: Immunopharmacological study on cefepime in broilers

Abstract

Objective: This study was performed to investigate the effect of cefepime on the cellular and humeral immunity, hemogram and some histopathology of the treated broilers. Total number of 120 of one day old chicken were divided equally into four groups Group 1 : non-vaccinated, non-treated, negative control group, Group 2 IBV vaccinated, non-treated group,Group 3 non-vaccinated ,cefepime-treated group,Group 4 IBV-vaccinated ,cefepime-treated group positive group . The ration and water were supplied ad-libitum throughout the experimental period. Live body weight, body weight gain, feed consumption, and feed conversion ratio (FCR) were calculated , Five blood samples were collected randomly to determine CBC, TLC and DLC. At the end of the experiment (the 14th week post treatment), 4 birds from each group were anesthetized and sacrificed by cervical dislocation. Spleen, thymus, cecal tonsils , Bursa of Fabricius, liver and kidney organs collected for histopathological examination .The obtained results displayed that, after cefepime administration there was a significant increase in RBCs(p< **0.0001)** in **G3** and **G4** compared with **G1** and **G2** . Moreover, there was a significant decrease (p<0.0001) in Hb concentration in **G2** and **G4** compared with **G1** and **G3.**In addition, there was a significant decrease (p<0.0001) in **G3** compared with G2 . Similarly, there was significant reduction in IgG titer (P<0.0001) of **G4** compared with **G3** . there was a significant decrease (p<0.0001) on IgM titer of **G2** and **G4** compared with **G1** and **G4** compared with **G3** ,Meanwhile, there was a significant increase (p<0.0001) on IgM titer of **G3** and **G4** compared with **G2.** At the end of this experiment, it could be concluded that, cefepime at the tested therapeutic dose doesn't cause noticeable differences in the hematological picture, while there were some reversible adverse effects on both cellular and humeral immunity of treated birds

Design: Descriptive study

Animals: A total number of one hundred and twenty-one-day-old (Rose) broiler chicks were purchased from a commercial hatchery (Romana Co, for Poultry, Egypt) and reared on a clean dry litter under complete hygienic conditions. They were maintained under standard husbandry practices in suitable space, light, humidity and temperature.

The birds received feed and water ad-libitum throughout the entire length of the experiment. The feeding regime program included a starter ration 23% protein (1-21 days old), growth ration 21% protein (22-60 days old).and kept under observation until the age of 25 days to ensure their adaptation to the environment.

Procedures: On day 25 of the chicken´s life, chickens were divided equally into four groups (30chick/group), as following:

1_**Group 1** : non-vaccinated, non-treated, negative control group **(C)** .

2_**Group 2** : IBV vaccinated, non-treated group **(V).**

3_**Group 3** : non-vaccinated ,cefepime-treated group **(T).**
4_**Group 4** : IBV-vaccinated ,cefepime-treated group positive group **(VT)**.

Groups were reared in isolated experimental units under similar housing condition until the end of the experimental period (8weeks).

Results: .The obtained results displayed that, after cefepime administration there was a significant increase in RBCs($p< 0.0001$) in G3 and G4 compared with G1 and G2 . Moreover, there was a significant decrease ($p<0.0001$) in Hb concentration in G2 and G4 compared with G1 and G3.In addition, there was a significant decrease ($p<0.0001$) in G3 compared with G2 . Similarly, there was significant reduction in IgG titer ($P<0.0001$) of G4 compared with G3 . there was a significant decrease ($p<0.0001$) on IgM titer of G2 and G4 compared with G1 and G4 compared with G3 ,Meanwhile, there was a significant increase ($p<0.0001$) on IgM titer of G3 and G4 compared with G2.

Conclusion and clinical relevance:At the end of this experiment, it could be concluded that, cefepime at the tested therapeutic dose doesn't cause noticeable differences in the hematological picture, while there were some reversible adverse effects on both cellular and humeral immunity of treated birds

Keywords: broiler chicken, heamatology , cellular immunity, hummeral immunity

23: Enterobacterial repetitive intergenic consensus- PCR of Methicillin-resistant Staphylococcus aureus isolated from pet animals

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Abstract

Methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the potential pathogens in pet animals and has public health hazards worldwide. This project was aimed to investigate the frequency of MRSA in pet animals and to assess the antimicrobial susceptibility of the recovered strains as well as to determine the isolates genetic relatedness using Enterobacterial Repetitive Intergenic Consensus (ERIC)-PCR. Out of the 270 swab (nostril, mouth, and abscess swabs) samples collected from veterinary clinics and shelters in Mansoura city, Egypt, 64 (23.7%) *S. aureus* isolates (49/224; 21.8 % from cats and 15/46; 32.6% from dogs) were identified. Among them, 40.6% (26 /64) were confirmed to be MRSA and 59.4% (38/64) were identified as MSSA. Antimicrobial susceptibility test results showed the highest resistance rates of MRSA isolates to penicillin (100%), oxacillin (100%), followed by amoxicillin-clavulanic acid (92%), cefotaxime (92.4%), kanamycin, streptomycin, tetracycline (84.6%; 22/26 each), and lower resistance to vancomycin (38.5%). Furthermore, MSSA isolates showed moderate resistance to amoxicillin-clavulanic acid (52.6%), followed by sulfamethoxazole trimethoprime (26.3%). Multi drug resistant (MDR) was found in all MRSA isolates (100%; 26/26) and the most identified antimicrobial resistance patterns was P, AMC, OX, CTX, TE, S, K. A total of 26 identified MRSA strains were

divided into 22 ERIC-PCR groupings (A-V) that were categorized into two clusters, ERIC cluster I and ERIC cluster II. Among them, the most common ERIC type (11.5%) was ERIC A. The significance of multidrug resistance MRSA to public health needs continuous testing of antimicrobial medications against MRSA isolates. Also, ERIC PCR demonstrate promising typing that might be conveniently employed on a regular basis to study the genotypic alterations of MRSA, particularly in pets.

24: Protective role of curcumin against hematological alterations and hepatic damage induced by gentamicin in rats

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Abstract

Gentamicin (GEN) is considered an aminoglycoside antibiotic which is widely used to treat numerous bacterial infections. It has toxic effect on liver tissue. Curcumin (CMN) is a natural polyphenolic compound with anti-oxidant as well as anti-inflammatory potentials. The current study sought to investigate the effect of CMN in protecting against GEN-induced hematological alterations and hepatotoxicity. Rats were randomly assigned into 4 equal groups: Control, gentamicin group (100 mg/kg b.wt, i.p, daily for seven days), curcumin group (200 mg/kg b.wt, orally for 21 days) and curcumin plus gentamicin group. After 21 days, some hematological and serum biochemical parameters were measured. GEN-intoxicated group showed a marked decline in RBCs count, Hb concentration as well as PCV% with insignificant difference in MCV, MCH and MCHC. Moreover, there were leukopenia, lymphopenia and neutrophilia in GEN group. Concerning to the serum biochemical examination, a substantial increase in the serum activities of ALT, AST and ALP with a marked decline in the total protein, albumin and globulin serum levels were recorded following GEN injection. In addition, there was a marked increase in the cholesterol, triglycerides and glucose serum levels. Improvement in all tested parameters were noticed following concurrent CMN administration with GEN. Based on these results, CMN could be recommended as a treatment strategy for protection against GEN-induced hematological alterations and hepatic injury.

Keywords: Gentamicin; Curcumin; hepatotoxicity; oxidative stress; hematological alterations.

25: Chitosan and peptic ulcer in rats

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ABSTRACT

Objective: The current study investigated the protective effect of chitosan in ethanol-induced) peptic ulcer in rats.
Animals: Sprague-Dawley rats
Experimental design : Animals were divided into four groups (n = 10): control group , Ulcerated group , chitosan treated group and chitosan pre-treated group and markers of redox state and oxidative stress were determined at the end of the experiment like superoxid dismutase (SOD) and Glutathione peroxidase (GPX), as well as lipid peroxidation markers like MDA (malonaldialdehyde), proinflammatory markers like (NO) nitric oxide, and (IL6) Interlukin 6 And apoptosis markers like(Bax) and (Bcl2)
RESULTS: Histological observation showed gastric mucosa of chitosan treated group had better healing effect. Chitosan significantly Inhibited (MDA) generation for lipid peroxidation ($P < 0.05$). Chitosan significantly promoted the activity Of (SOD) and (GPx) ($P < 0.05$). NO activity decreased in chitosan treated and pretreated groups. IL6 level showed increasing in both chitosan treated and pretreated groups. In Bax There is Non significant increasing between chitosan treated and pre treated groups. In Bcl2 there is non significant decrease in both chitosan groups. PH of the stomach return to normal in both groups of chitosan.
CONCLUSION: Chitosan can improve gastric mucosa tissue repair, exert significant influences on oxidative and antioxidant enzyme Activities and neutrophil infiltration.
Key words: Chitosan. Peptic. Gastric Ulcer. . Malondialdehyde. Ethanol. Rats

26: Growth Performance and Health Responses of Growing New Zealand White Rabbits Fed Different Levels of Dietary Synbiotic

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Abstract: Countering the antibiotics excessive use by the exploitation of promising immunostimulants alternatives is a trending strategy in modern animal husbandry. This research assessed the impact of novel dietary synbiotic supply at different levels on growing rabbits' performance. Forty-five New Zealand White rabbits were randomly allotted to five groups. Rabbits were fed the basal diet as control and the other groups supplemented with synbiotic (*Saccharomyces cerevisiae* along with β-glucan and mannan-oligosaccharide) at an inclusion level of 0.5, 1.0, 1.5 and 2.0 g/kg diet for 6 weeks. Results indicated that synbiotic addition increased the feed intake (p=0.01), enhanced the growth performance and feed conversion ratio (linear, $p \leq 0.001$; quadratic, $p \leq 0.002$) with the 0.5 g/kg diet level being the most effective. The synbiotic supply increased the serum total protein and albumin (quadratic, $p \leq 0.024$) as well as lipase and amylase (linear, $p < 0.001$; quadratic, p=0.001), while decreased alanine-aminotransferase, urea,

triglycerides, and glucose (quadratic, $p \leq 0.023$) as well as cortisol (linear, $p < 0.001$; quadratic, $p \leq 0.001$). The concentrations of immunoglobulin-G, immunoglobulin-M, red blood cells, hemoglobin, hematocrit, and platelet count increased (linear, $p \leq 0.001$) and white blood cells decreased (linear, $p < 0.001$) by the synbiotic inclusion. The hot carcass weight and the percentages of dressing, and carcass cuts were increased (quadratic, $p \leq 0.02$) in which the 0.5 g/kg diet level was better. Taken together, the current dietary synbiotic supplementation of 0.5 g/kg diet could pave the way for promoting the rabbits' growth and health status, thus, it is advisable to utilize these findings in the husbandry of rabbits under commercial production conditions.

Keywords: Synbiotic supplementation, growth performance, serum metabolites, carcass traits, New Zealand White rabbits.

27: Impact of Supplementing a Frankincense–*Melissa officinalis* Extract Mixture to Drinking water on the Performance and Economic Efficiency of Two Commercial Japanese Quail Strains.

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Abstract

The purpose of the experiment was to investigate how a F-MOE mixture in drinking water affected the growth, carcass traits, sensory meat quality, and economic efficiency of two commercial Japanese quails strains. A total of 120 one-day-old Japanese quails, comprising black quails (n=60) and white quails (n=60), were utilized for the experiment. The experiment commenced when the quails were 14 days old, after a two-week adaptation period. They were randomly divided into two treatment groups, each containing 30 birds, with three replicates of 10 birds in each group. The basic diet plus 2 ml F-MOE mixture in drinking water and the basic diet plus drinking water without any supplement (control) were the two treatments used in the experiment over a four-weeks period. The results demonstrated that supplementation with F-MOE significantly improved growth traits, dressing-out percentage, sensory meat quality, and economic efficiency compared to the control group. When the strain effect was considered, the white strain outperformed the black strain in terms of growth traits, dressing-out percentage, and economic efficiency.

Keywords: Japanese quails, F-MOE mixture, growth traits, carcass traits, sensory meat quality, economic efficiency.

28: Detection of extended-spectrum β-lactamases producing *Escherichia coli* from beef in Mansoura, Egypt

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Abstract

Objective: The objective of the current study was to identify extended-spectrum β-lactamase-producing *Escherichia coli* (ESBLs) from beef meat in Mansoura City, Egypt.

Design: Randomly selected 150 buffalo meat samples were obtained from retail butcher shops located in Mansoura City, Egypt. Samples were inoculated into enriched broth media and then directly streaked on *E. coli* selective agar for selective isolation of *E. coli*.

A biochemical examination was performed for the preliminary identification of *E. coli*. Suspected *E .coli* isolates were then confirmed by PCR targeting 16S rRNA. Confirmed *E. coli* isolates were tested for their susceptibility to antimicrobials by using Kirby–Bauer disc diffusion method. Additionally. *E. coli* were tested for the presence of β-lactamases (*bla*$_{CTX}$, and *bla*$_{SHV}$ and *bla*$_{TEM}$) using PCR.

Results: *E. coli* was isolated from 37 out of 150 tested samples with a total prevalence of 24.66 %. *E. coli* isolates revealed a high resistant against cefotaxime and ceftazidime, and moderate resistance against amoxyclavulanic acid, while a high sensitivity of *E. coli* was displayed against meropenem and imipenem. Moreover, the tested *E. coli* (n=37) harbored ESBLs genes with percentages of 40.5% for both *bla*$_{CTX,}$ and *bla*$_{SHV}$ and 35% for *bla*$_{TEM}$

Conclusion and clinical relevance: *E. coli* produces extended-spectrum β -lactams that were isolated from meat and contained a substantial level of antibiotic resistance genes. To increase food processing quality and provide safe food for consumers, it is crucial to build food traceability and monitoring systems for meat and meat products.

Keywords: *E. coli*, beef, ESBL, antimicrobials susceptibility

29: Immunopharmacological study on cefepime in broilers

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Abstract

This study was performed to investigate the effect of cefepime on the cellular and humeral immunity, hemogram and some histopathology of the treated broilers. Total number of 120 of one day old chicken were divided equally into four groups Group 1 : non-vaccinated, non-treated, negative control group, Group 2 IBV vaccinated, non-treated group,Group 3 non-vaccinated ,cefepime-treated group,Group 4 IBV-vaccinated ,cefepime-treated group positive group . The ration and water were supplied ad-libitum throughout the experimental period. Live body weight, body weight gain, feed consumption, and feed conversion ratio (FCR) were calculated , Five blood samples were collected randomly to determine CBC, TLC and DLC. At the end of the experiment (the 14th week post treatment), 4 birds from each group were anesthetized and sacrificed by cervical dislocation. Spleen, thymus, cecal tonsils , Bursa of Fabricius, liver and kidney organs collected for histopathological examination .The obtained results displayed that, after cefepime administration there was a significant increase in RBCs(p< **0.0001)** in **G3** and **G4** compared with **G1** and **G2** . Moreover, there was a significant decrease (p<0.0001) in Hb concentration in **G2** and **G4**

compared with **G1** and **G3.**In addition, there was a significant decrease (p<0.0001) in **G3** compared with G2 . Similarly, there was significant reduction in IgG titer (P<0.0001) of **G4** compared with **G3** . there was a significant decrease (p<0.0001) on IgM titer of **G2** and **G4** compared with **G1** and **G4** compared with **G3** ,Meanwhile, there was a significant increase (p<0.0001) on IgM titer of **G3** and **G4** compared with **G2.** At the end of this experiment, it could be concluded that, cefepime at the tested therapeutic dose doesn't cause noticeable differences in the hematological picture, while there were some reversible adverse effects on both cellular and humeral immunity of treated birds

30: A Current and Future Overview for Fish Resources in Egypt achieve sustainable goals of 2030 Egyptian Strategy

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Abstract:

Aquaculture is rapidly expanding in the global animal food production sector, growing at an average rate of 6-9% annually. It plays a significant role in meeting the world's fish food demand, spanning from 12% to 47%. This sector also provides substantial global employment, offering around 20.67 million jobs. Egypt stands out in this field, leading African aquaculture with 1.7% of global production (1.59 million tons), projected to reach 2.65 million tons by 2030. Egypt's aquaculture involves both freshwater and other water sources, contributing 65-76% and 24-35% of cultured fish, respectively. Despite its potential, the aquaculture sector faces multifaceted challenges. These challenges span technical, environmental, administrative, financial, and legislative domains, along with market-related hurdles. Additionally, the future holds further complications as water resources dwindle, human population surges, marine fish fry decrease, and global climate change exacerbates existing predicaments.

Moreover, climate change compounds the challenges faced by the aquaculture sector. The burning of fossil fuels releases carbon, sulfur, and nitrogen oxides, leading to toxic compounds that contribute to "global warming." Temperature increases lead to various repercussions,

including alterations in precipitation patterns, snow and ice melting, shifts from drought to floods, diminished water quality, sea level rise resulting in groundwater salinization and aquatic organism threats, heightened ocean acidity causing migration and species extinction, and reduced dissolved oxygen levels driving fish metabolism, disease spread, and mortality rates. In light of these challenges, comprehensive strategies, sound policies, and scientific collaboration are essential to steer aquaculture towards sustainable growth and safeguard the health of aquatic ecosystems in Egypt and beyond.

To address these challenges, the Egyptian Government's strategic objectives for the fisheries and aquaculture sectors for 2020-2030 emphasize vital facets. These include water body preservation, scientific research advancement, vertical and horizontal fish farm development, institutional restructuring, capacity building, policy and regulation enhancement, aquaculture integration support, marketing and feed industry expansion, fish stock exchanges proliferation, environmental studies for fishing areas, and seas and lakes development. Strategic implementation calls for consistent efforts in water and land monitoring, fish resource identification, marine hatchery establishment, fisheries legislation refinement, organized training courses, genetic enhancement for improved productivity, investment in fish feed and related industries, aquatic animal health regulations, disease control, biosecurity measures, product quality assurance, adherence to marketing standards, and an overarching focus on environmental sustainability.

Overall, of notable concern is the risk assessment related to veterinary drug residues. A robust system must be in place to monitor and ensure the proper use of veterinary drugs during fish production. This includes adhering to manufacturer instructions, adhering to withdrawal periods, registering products with competent authorities, relying on veterinary prescriptions, compliant storage and transportation, following recommended practices, ensuring clear identification of pharmaceutical feeds, maintaining thorough record-keeping, and adhering to permissible drug residue concentrations.

31: Effects of dietary supplementation of *Nannochloropsis* on gene expression and serum profile of metabolic and lipogenic markers in growing Barki lambs

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Abstract

The objective of this study was to investigate the effects of dietary supplementation of *Nannochloropsis* on gene expression of lipogenic and metabolic genes and link this gene expression with body growth, growth performance, and metabolic profile in growing Barki lambs. For this reason, twenty apparently healthy growing Barki lambs were randomly allocated into two equal groups (10 lambs each). The first group (control) received the basal diet without feed supplement whereas the second group (supplemented) received the basal diet supplemented with *Nannochloropsis* powder which given in the concentrate at a rate of 10 g /kg/day for subsequent 30 days. A blood sample was collected from each lamb via jugular venipuncture before starting the experiment (T0), 15th day (T15) and 30th day (T30) after supplementation for hematobiochemical examination. Body weight and body growth indices of each lamb were calculated weekly. Levels of *ACACA*, *FASN*, *SCD* and *FABP4* genes expression were significantly up-regulated in supplemented lambs at (T15) and (T30) than control ones while *DGAT1*, *insulin*, *glucokinase* and *glucose transporter* showed a significant up-regulation at day 30 compared to control and day 15. Supplemented lambs had a significant ($P < 0.05$) increase of final body weights, daily weight gain and feed intake with significant ($P<0.05$) decrease of feed conversion ratio. From the third week onwards, the body weight, body length and body condition score were significantly ($P > 0.05$) higher in the supplemented group. There was a significant ($P<0.05$) increase in Hb, erythrocyte count, leukocyte count (WBC), serum level of glucose, insulin, triglyceride, total protein, globulin and BUN with significant ($p < 0.05$) decrease of cholesterol, ALT and AST in supplemented lambs in relation to control ones at T30. The results suggest that *Nannochloropsis* could be used as a useful supplement to improve health status and body growth of growing Barki lambs.

Keywards *Nannochloropsis oculata*, gene expression (RT-PCR), growth, metabolic variables, Barki lambs

32: Effect of linseed oil and fermented pomegranate peel supplementation on the growth performance, plasma metabolism, and muscle fatty acid deposition of heat-stress broiler chickens

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Abstract

This study aimed to investigate the efficiency of adding dietary linseed oil and fermented pomegranate peel on growth performance, digestibility, antioxidant capacity, and muscle fatty acid deposition in heat-stressed broilers. Three hundred Ross 308 broiler chicks (1 day old) were randomly assigned to four groups (group/five replicates). Dietary treatments included: (CON) corn-soybean meal basal diet; (FPP) basal diet + fermented pomegranate peel 4g/kg; (LIO) basal diet + 3% linseed oil; (FPLO) basal diet + fermented pomegranate peel + linseed oil. Compared with CON, broilers fed FPLO diet showed improved body weight gain and feed conversion ratio, while the experimental diet did not affect the feed intake. Broilers fed FPP or FPLO diet had higher dressing percentages and lower relative weight of abdominal fat than other groups, whereas other carcass traits and digestive enzymes activities were not influenced by treated groups. Nutrient digestion enhanced, as the crude protein digestibility increased in chickens fed FPP and FPLO, while the crude fat digestibility increased in chickens fed LIO and FPLO. Cholesterol and triglyceride concentrations decreased, while the HDL concentration increased in the chickens fed FPP and FPLO compared to other groups. The oxidative status was enhanced by the experimental additives, as the SOD and GSH-Px levels increased and the MDA level decreased in the serum in treated groups compared to the control group. Chickens fed FPP and FPLO had an improvement in gut health, as the number of *Lactobacillus* increased and the number of *E. coli* and *Total coliforms* decreased. A significant increase in unsaturated fatty acid and a decrease in the n-6:n-3 ratio was noticed in the muscles of chickens fed LIO and FPLO compared to other groups. This research indicates that diets supplemented with a combination of fermented pomegranate peel and linseed oil experience an

improvement in growth performance, blood antioxidant capacities, and fatty acid profile in the muscle of heat-stressed broilers.

KEYWORDS: Broiler chickens, Performance, antioxidant status, Fatty acid deposition, Linseed oil, pomegranate peel.

33: Detection virulence determinants and antimicrobial susceptibility of *Vibrio species* isolated from raw fish markets

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Abstract

Vibriosis is a major cause of death in farmed aquaculture systems around the world caused by an infection with *Vibrio spp*. This study was performed to detect the prevalence of pathogenic *Vibrio species* from various fish species (n=200) collected from Port-Said fish markets as well as to assess the antimicrobial resistance profile and virulence determinants of the isolated *Vibrio*. Fish samples were inoculated onto *Vibrio*-selective medium (TCBS), and phenotypically identified using biochemical tests and the suspected isolates were then confirmed by PCR targeting collagenase gene followed by sequencing of the amplified gene. Disc diffusion method was used to investigate the antimicrobial susceptibility of the isolated strains as well as the virulence determinants were detected by PCR assay. Out of 200 fish samples, 80 *Vibrio* isolates including *V. parahaemolyticus* (22 /80) and *V. alginolyticus* (58 /80) were recovered. While, *V. vulnificus* couldn't be identified. *Vibrio*

isolates displayed high resistance to beta-lactams antimicrobials and a lower resistance were displayed against tetracycline, quinolones and carbapenems. Additionally, *tlh* gene was present in all *V. parahaemolyticus* isolates, while the *tdh* gene was present in 27.1% (6/22). In conclusion, the results of this study provide information on the hazards that certain fish and shellfish could bring by transferring virulent and genetic resistance of *V. parahaemolyticus* and *V. alginolyticus* to people through seafood., therefore, consumers should be more alert, prepare seafood properly, and avoid undercooked or cross-contaminated fish.

Key words: *V. parahaemolyticus*, *V. alginolyticus*, seafood, virulence determinants, antimicrobial susceptibility.