

Histopathological change of gill in *Barbus sharpeyi* exposed to different levels of salinity

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Aim of this research is histopathological study of different salinity effects in the gill of *Barbus sharpeyi*. After a week adaptation, 120 fingerling fish were divide into 4 aquariums had the following different salinities 4, 8, 10 and 12 g/l and one other was contained control fishes and exposed for 96 hours. Then samples of tissues were prepared and fixed in 10% formalin. After tissue processing, dehydration, clearing and blocking, 5µm sections were prepared and stained with haematoxylin and eosin and studied by light microscope. Findings showed a major change in gill structure exposed to different salinity compare with the control fish. Epithelial lifting was observed in all concentrations, but high concentrations showed more severe lesions. In these concentrations epithelial hyperplasia, increased Chloride cell and mucosal cell, epithelial lifting, mucosal cell and chloride cell hypertrophy were observed. The present results, showed that salt have toxic effects in *Barbus sharpeyi* and result to histopathologic lesions in gill.

Keywords: Treatment, Salinity, Tissue lesions, Epithelium, *Barbus sharpeyi*

Molecular identification of *Escherichia coli* pathotypes EAEC and EPEC strains isolated from dairy cows with mastitis by Multiplex-PCR and determination of antibiotic resistance by disk diffusion method and E-test

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E. coli as normal intestinal tract flora of animals and humans are harmless bacteria. Although most strain of *E. coli* are not pathogenic, but some strains can cause a variety of enteritidis and non-enteritidis diseases. Antibiotic resistance microorganisms are important in treatment of infectious diseases. The aim of this study was to investigate the frequency of genes pathotypes EAEC, EPEC and antibiotic resistance *Escherichia coli* isolates from animal specimens.

Collected 50 samples had undergone various biochemical and microbiological tests to identification or confirmation of microorganisms. Then antibiotic susceptibility tests were performed by disk diffusion method according to CLSI guidelines. E-test was performed with different antibiotics groups. Multiplex PCR assay was used to identify genes pathotypes.

All of the clinically isolated *E. coli* was susceptible to erythromycin (100%), resistance to ampicillin (93%), sensitive to amikacin (100%) and susceptible to nitrofurantoin (96%). Many strains were multidrug resistance. The results of 50 samples of cattle milk Multiplex PCR have shown four samples (8%) carried gene *bfPA* (pathotypes EPEC).

The results of the M-PCR in this study were inconsistent with the results of other study has done in different countries. This inconsistency may raise due the difference source of isolation site thus in our study isolation source mastitis milk samples were examined, but in other research stool was the source. The difference in samples isolated from milk can be due to differences in geographical areas.

Keywords: *Escherichia coli*, Antibiogram, E-test, EPEC, Multiplex PCR

Plaque formation by Newcastle virus strain V₄ on cell culture and characterization with RT-PCR

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Cloned vaccines are used in many countries nowadays. One of the ways for cloning a virus is propagation of the virus on cell culture to obtain discrete different plaques in order to study their morphology and genetics. In this study monolayer Madin-Darby Canine Kidney (MDCK) cell cultures were prepared by standard method. Various dilutions of the viruses were inoculated into monolayer MDCK cell cultures that were supplemented with magnesium sulfate and trypsin, and overlaid with agar medium. The viruses could reproduce on these cells and caused cytopathic effect and plaques. At 10⁻⁶ virus dilution, 6 various shape and size discrete plaques were obtained and inoculated into allantoic fluid 9-11 days embryonated eggs. After 48 hrs, the allantoic fluids contain plaques were harvested and their RNA extracted. Cleavage site of fusion protein, with RT-PCR test was performed and the PCR products were purified and sequenced. The sequences of nucleotides and amino acids for each plaque were compared with those of the registered strain at gene bank as well as with each other. Molecular studies showed that all plaques are lentogenic strain of Newcastle disease virus and has about 97% to 99% homology with the strain V₄ in the gene bank. The aim of this study is produce clear plaque by V₄ strain of NDV on MDCK cell line and studies the molecular variations among them.

Keywords: Newcastle disease virus (V₄), RT-PCR, Cell culture

Comparative study on geometric and histopathologic effects of polar, semi polar and non-polar fractions *Artemisia absinthium* extract in rat

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Recovery of Scars is a treatment challenge in some diseases and chronic disorders. For this reason, new compounds are used for rapid recovery of Scars and conglutination. It is expected that *Artemisia absinthium* as a galenical and herbal drug, has rapid recovery effects in scars and sores because has anti- inflammation effects, activation of fibroblast cells and also antihyaluronidase effects cause the rapid recovery of sores. In this study, effects of *Artemisia absinthium* on recovery of sores as polar, semi polar and non-polar extractions of it are investigated on the rat as a second recovery. After anesthesia, with use of biopsy punch, Created circular sores with full thickness on the 70 female rats and recovery process were investigated in 5 groups. Drug administration and sores measures performed with analyzing of digital Scans, once a day for 21 days. For microscopic observations, gathered Samplings form this tissue in the 0, 3, 7, 14, 21 days, and microscopic symbols are ranged as edema factors and swelling reactions, hyperemia and bleeding, fibroblast, of Coverage tissue, torsion of sores and maturation of granular tissue. After histopathology and Calculation of recovery of sores scale for each drug, the finding results analyzed with SPSS software 17 versions. On the basis of geometric findings of recovery period, observed that semi polar extract of *Artemisia absinthium* has maximum Contraction of sores and control group has the least contraction of sores. Also, based on the histopathology results, total recovery in this group is better than other groups. In the second and third week. Recovered tissue has better organization than the other groups.

Keywords: *Artemisia absinthium*, Polar, Semi polar, Non polar, Healing skin wounds, Rats.

Identification of Microsporidian parasites (*Plistophora* sp.) in sub-adult broodstocks of *Litopenaeus vannamei* in Boushehr province

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The aim of this study was to identify and detection of microsporidian parasite from sub-adult brood stock culture of *Litopenaeus vannamei* by histology studies and histopathological lesions examination in various organs caused of parasite. The sub-adult brood stocks (27.81 ± 0.92 gram) were randomly sampled more than 450 pieces from greenhouse ponds of three breeding center of Bushehr province, from January to March 2014. Based on the clinical symptoms, some of shrimps were white and milky cephalothoraxes and dorsal-ventral abdominal muscles. According to wet mount and histology observations, spore of *Plistophora* sp were separated from infectious shrimps. Histopathological lesions of hepatopancreatic infectious shrimp were including nucleus hyperthrophy of epithelial cells, change shape of B-cells, necrosis of E-cells and dilation of tubules along with necrosis of muscle cells and decline of ovaries. The results showed that length and weight means of infectious shrimps comparing contamination free of shrimp were significantly deference ($P < 0.05$).

Keywords: *Litopenaeus vannamei*, Microsporidea parasite, *Plistophora* sp., Histopathological lesion

Determination of intraocular safe and nontoxic dosage of propranolol in rabbit's eye by Electroretinography

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Propranolol is a non-selective beta adrenergic receptors blocker. In attention to the role of adrenergic receptors on neovascularization in tissues, beta adrenergic receptors blocker such as propranolol was considered to control this process. Previous investigations indicate that propranolol can reduce retinal neovascularization. In this investigation we tried intravitreal administration of propranolol to investigate intraorbital side effects of this drug and determination of the intravitreal safe dose of propranolol for use to retinopathies with neovascularization in future. In this study we use 28 rabbits divided to 4 groups, so each group consisted of 7 rabbits. One Group as control group was given intravitreal injections with normal saline (60 µc.litre). Three other groups as propranolol group's intake intravitreal injections by propranolol by three different doses (group 1: 15 µc.gram, group 2: 30 µc.gram and group 3: 60 µc.gram). All of injections did in the right eyes of all rabbits. Ophthalmic examinations and ERG were used to assess the effect of intravitreal propranolol injections in all rabbit's eyes for 4 weeks. The results of retinal examinations indicate that not see any abnormality changes in all groups. But the results of ERG represents significant reduce of b waves in group 3 (P=0.036). This investigation indicates that the dose of 60 µg of intravitreal propranolol is not safe dose and we did not find evidence of retinal toxicity from intravitreal injection of 30µg and less than 30µg propranolol in rabbit's eyes.

Keywords: Propranolol, Intraocular dosage, Rabbits eye

Serological evaluation of effect of magnesium sulfate on renal function after kidney I/R in rat

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Ischemia reperfusion is a Cellular damage that occurs on return of blood to the ischemic tissue. In this study the preventive effects of magnesium sulfate on complications induced by ischemia reperfusion was investigated. In this study, 25 male Wistar rats were used randomly divided into 5 groups of 5. The Sham group: The group has not received any medication and after only a week, blood sample was collected. The Control group (IR): The group has not received any medication before ischemia reperfusion. After a week the abdominal cavity was opened and a renal vessel were closed with non-traumatic forceps and after 45 min were released, then 8 hours later blood sample was collected. The third group (25mg/kg): This group was administrated orally with magnesium sulfate (25 mg/kg) for a week and after a week the abdominal cavity was opened, and renal vessels were closed with non-traumatic forceps and after 45 min were released then 8 hours later blood sample was collected. The forth group (50mg/kg): The group was administrated orally with magnesium sulfate(50mg/kg) for a week, and after a week the abdominal cavity was opened, and renal vessels were closed with non-traumatic forceps and after 45 min were released, then 8 hours later, blood sample was collected. The fifth group (100mg/kg): The group was administrated orally with magnesium sulfate (100mg/kg) for a week, and the abdominal cavity was opened after a week, and renal vessels were closed with non-traumatic forceps and after 45 min were released, then 8 hours later, blood sample was collected. At day zero (before drug administration) and after the end of ischemia-reperfusion and 8 hours later, blood samples were collected and serum creatinine and BUN levels were examined. Data was analyzed statistically ($P < 0.05$). The result of this study shows that serum BUN and creatinine levels, in pretreated groups with Magnesium sulfate in contrast with untreated groups are lower. Consequently Magnesium sulfate could prevent ischemia-reperfusion induced injury to the kidney.

Keywords: Ischemia - Reperfusion, Magnesium sulfate, Rat.

