

Effects of different levels of salinity on number and size of chloride cells in gill of Benny fingerling (*Barbus sharpeyi*)
Koohkan, O.*

**Department of Marine Biology, Faculty of Marine Science, Chabahar Maritime University, Chabahar, Sistan&Balouchestan .I.R. Iran. (O.koohkan@cmu.ac.ir)*

This study was accomplished to evaluate osmotic regulation ability of Benny fish by mitochondria-rich cells and study of the effect of salinity in different levels on their gill. For this purpose, 120 fish transferred into four aquariums containing 4, 8, 10 and 12 g/l salinity, after a week adaptation. Sampling was carried out after 96hrs and tissues prepared and fixed in 10% formalin for 48hrs. After tissue processing, 5 μ m sections were prepared and stained with haematoxylin and eosin and studied by light microscope. The observations showed most presence of chloride cells in basement of filament and lower in lamellae of *Barbus sharpeyi*. Chloride cells and mucosal cells increased in size and number with salt concentrations increasing and showed significant different in some treatments ($P < 0.05$). Mucosal cell number in 12 g/l concentration showed significant increasing compared to both control group and 4 g/l concentration, but no significant difference with other treatments. In chloride cells, only 12 g/l treatment showed a significant difference ($p < 0.05$) compared to control group in number and size.

Keywords: *Barbus sharpeyi, Gill, Chloride cell, Salinity, Osmoregulation*

Survey on prevalence of main serogroups and F5 fimbria gene in Enterotoxigenic *Escherichia coli* isolates from diarrheic calves under five days in Alborz and Qazvin provinces

Gharabaghi, A.^{1*}, Lotfollahzadeh, S.², Mokhber Dezfouli, M.R.³, Moosakhni, F.⁴, Yadegari, Z.⁵, Nikbakht Brojeni, G.R.⁶

1-* Department of Large Animal Internal Medicine Group, Faculty of Veterinary Medicine, Tehran University, Tehran, Iran (Gharabaghi@ut.ac.ir)

2- Department of Large Animal Internal Medicine Group, Faculty of Veterinary Medicine, Tehran University, Tehran, Iran

3- Department of Large Animal Internal Medicine Group, Faculty of Veterinary Medicine, Tehran University, Tehran, Iran

4- Department of Microbiology, Molecular Microbiology Group, Faculty of Veterinary Medicine, Islamic Azad University, Karaj, Iran

5- Department of Microbiology, Molecular Microbiology Group, Faculty of Veterinary Medicine, Tehran University, Tehran, Iran

6- Department of Microbiology, Molecular Microbiology Group, Faculty of Veterinary Medicine, Tehran University, Tehran, Iran

Escherichia coli is the natural inhabitant of gastrointestinal tract of animals and also human beings. However, some pathogenic strains of *E. coli* cause variety of intestinal and extra intestinal diseases. Enterotoxigenic *E. coli* (ETEC) is the most common cause of diarrhea syndrome in neonatal farm animals and thus is one of the significant causes of economic losses in herds. Fimbriae are the most important factor associated with pathogenicity of ETEC which carry adhesions and work as secretory enterotoxin. The most common fimbriae in calves are F5 (K99) and F41. K99 isolates most commonly belong to serogroups O8, O9 and O101. The objective of this study was to investigate the frequency of genes associated with different serogroups (O8, O9, O101, etc) and K99 fimbriae in fecal samples obtained from calves under 5 days of age. Samples were cultured on MacConkey's agar, then from each palate, three colonies were cultured separately. Strains were screened for K99 genes and then for O101 by PCR assay, if negative results were obtained, Multiplex PCR was performed to identify genes associated with serogroups O8, O9 and O115. In this study, the frequency of genes associated with O8, O9, O101, O115 serogroups and K99 fimbriae in diarrheic calves were 18.7%, 9.3%, 56.3%, 7.8% and 9.3%, respectively. K99 fimbriae occurred at higher frequencies in O101 serogroup and were detected in 83.3% of those strains.

Keywords: *Escherichia coli*, Diarrhea, Serogroups, Multiplex PCR, Calf

Evaluation of pulse and continues administration of Enrofloxacin on serum biochemical indices and performance in colibacillosis infected broilers

Feizi, A.*

* *Department of Clinical Sciences, Tabriz Branch, Islamic Azad University, Tabriz, Iran (a_feizi@iaut.ac.ir, a_feizi@rocketmail.com)*

To reduce the losses caused by the *E. coli*, antimicrobials widely used in the poultry industry. The aim of this study was to compare pulse and continues administration of the Enrofloxacin on the performance and biochemical parameters were caused by colibacillosis. Four hundred and fifty colibacillosis infected broiler chickens was selected and distributed in 3 groups of 150 chicks and each with 3 replicates. In the first group Enrofloxacin was administrated 4 days continuously and in the second group it was administrated by pulse method 4 days and daily 8 hours and third group was as control. After treatment, 21 blood samples were taken from each groups, and by biochemical tests, the amounts of ALT, AST, total protein, ALP and creatinine was evaluated. White blood cells differentiated amount also were recorded. Gross lesions and clinical signs also evaluated during study period. For comparison the results Independent T-test and SPSS statistical software ver. 22.0 were used. Results indicated there was significant differences between the methods from AST and ALT aspect ($p < 0.05$). The results indicated that WBCs and heterophils were decreased in continues group ($p < 0.05$). Lymphocyte, Monocyte and Hematocrit was not different statistically between groups ($p > 0.05$). It was demonstrated that the pulse administration of Enrofloxacin has better outcomes in treatment of colibacillosis and also it was decreased costs of antibiotics usage in poultry production. Thus pulse administration suggested for treatment of colibacillosis.

Keywords: *Colibacillosis, Enrofloxacin, Pulse administration, Continues administration, Biochemical indices*

Molecular isolation of *Salmonella* from faeces of the street cat by PCR method Sadeghi Vafa, F.¹, Mashhady Rafie, S.^{2*}, Jamshidian, M.³

1- Graduated Student (DVM) of Department of Veterinary Tehran Science and Research branch, Islamic Azad University, Tehran, Iran (farnoushvafa@yahoo.com)

2*-Department of Clinical Science, Science and Research branch, Islamic Azad University, Tehran, Iran (SrIvet@yahoo.com)

3- Pathobiology Group of Department of Veterinary Tehran Science and Research branch, Islamic Azad University, Tehran, Iran

This study was performed for detecting enteric *Salmonella* in stray cats in Tehran. Stool samples obtained from 100 stray cats were referred to small animal clinics by SPCA members from different part of Tehran. Routine culture, serotyping test and molecular methods (PCR and M-PCR) were done for evaluating of genus and serovars of bacteria. Samples were placed in 37 °C for 24 hours in selective media such as Rambach medium. After the colonies appeared, they cultured in differential media such as TSI. Results recorded after 24 hours later. Only one sample showed *Salmonella* Spp. in culture method from a 2 month old kitten with hemorrhagic enteritis and severe dehydration. This sample and other suspected cases were tested by PCR and M-PCR subsequently. We found another case of *Salmonella enteritidis* from a female one-year-old cat without any clinical signs. Serotyping tests showed both cases belong to group D₁. Although *Salmonella enteritidis* is an important factor in human gastroenteritis and recorded from poultry farms and products, it is supposed to detecting this kind of *Salmonella* are created after exposing to related resources.

Keywords: *Salmonella enteritidis*, Serotyping, Cat, Tehran

Study of rosemary extract on BCL2 and BAX gene expression in canine mammary gland carcinoma cell line (CF41.Mg)

Shabani, S.¹, Mortazavi, P.^{2*}

1- *Student of veterinary medicine, Science and Research Branch, Islamic Azad University, Tehran, Iran*

2- ** Associate professor, Science and Research Branch, Islamic Azad University, Tehran, Iran
(sp.mortazavi@gmail.com)*

Apoptosis is named genetically programmed cell death and have special role in physiological and pathological conditions. BAX protein as a key protein in the apoptosis induced by various factors in the apoptosis pathway acts and BCL-2 have anti-apoptotic effect in response to various stimuli of the mitochondrial apoptosis by preventing the release of cytochrome C applies. In this study, the effect of rosemary extracts on the expression of BCL-2 and BAX genes on breast cancer cells dogs (CF41.Mg). in in vitro examined and the control group (which cell line CF41.Mg without drugs) were compared Cells at doses of 5,10,25,50 and 100 micromole rosemary extract for 24,48 and 72 hours were exposed then by using MTT, the effect of drug on cell survival were analyzed. The tests in which different levels of rosemary extract was added to the cell culture, it was determined that rosemary extract induced cell death after 48 hours' maximum amount to be allocated. The result suggests that the antitumor activity of the extract after 48 hours at a dose 25 mg/ml is more effective. The results of this study confirm the inhibitory effect of rosemary extract on canine mammary tumor cells (CF41.Mg).

Key words: *Canine mammary tumor, Cell culture, Rosemary extract, BCL-2, BAX*

Evaluation of serum levels of sialic acid, total protein and albumin in the horses with strangles

Hassanpour, A. *

**Associate professor of department of clinical science, Tabriz Branch, Islamic Azad University, Tabriz, Iran
(alihassanpour53@gmail.com or a_hassanpour@iaut.ac.ir)*

The study was conducted on 29 horses with strangles and 27 normal horses (negative culture) to evaluate serum levels of sialic acid, total protein and albumin in the Tabriz area. Patients were confirmed based on clinical and laboratory signs. Blood samples were tacked from jugular vein and were separated serum for measuring of total protein, albumin and sialic acid (total sialic acid, lipid bound sialic acid and protein bound sialic acid) levels in the serum. Mean levels of total protein in horses with strangles was higher than control group significantly ($P= 0.000$). But the mean serum albumin level in the patient group was higher than the control group of horses no significantly ($p= 0.208$). In the patient group increasing of total sialic acid, lipid bound sialic acid and protein bound sialic acid were significant ($P= 0.000$, $P= 0.000$ and $P= 0.001$ respectively). The correlation between serum parameters in the patient group was found that only the relationship between serum total protein with lipid bound sialic acid is significant ($r = 0.521$ and $P= 0.004$) and between the another serum parameters is not significant. In conclusion, strangles causes an increase in serum levels of sialic acid. Therefore, this issue must be considered in the treatment of these patients.

Keywords: *Sialic Acid, Total Protein, Albumin, Strangles*

Evaluation of the Analgesic and Sedative Effects of Pethidine (meperidine) with Xylazine in the Horse

Pouyan, M.¹, Ozmaie, S.^{2*}, Sakha, M.², Asghari, A.²

1- Veterinary Graduate Student, Science and Research Branch, Islamic Azad University, Tehran, Iran

2-* Department of Clinical Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran(z_ozmai@yahoo.com)

A variety of analgesic and sedative agents are available, and which one can be used in horses is a highly controversial issue. The purpose of this study was to evaluate the analgesic and sedative effects and effect on vital signs and probable *side effects* of administered pethidine with xylazine in the horse. Ten healthy mix breed horses 2-8 years of age, weighing 250-350 kg were randomly *divided into two groups*. A treatment group received combination of pethidine (2 mg/kg, IM) and xylazine (0.2 mg/kg, IV). The second control group received a saline placebo (1ml/45 kg bwt, IV). Heart rate, respiratory rate and rectal temperature were recorded. The records were averaged for the fifteen minutes' intervals to 6 hours after injection. Analgesia was assessed with pin prick in the tail and perineal region. Data were analyzed statistically by two way of analysis of variance (ANOVA) using repeated measurements and Duncan's multiple range tests to determine significant differences using $P < 0.05$. In this study pethidine with xylazine show good sedation but analgesia was not sufficient to perform surgery. Systemic sedative effects of pethidine / xylazine occurred at 45-120 minutes by drooping of the lower lip and leaning the head to the stock. Mean heart rate increased significantly ($P < 0.05$) above baseline in the treatment group at 30 and 60 minutes after injection. Rectal temperature decreased from baseline values in treatment group at 15 minutes after injection. The lowest recorded rectal temperature in the treatment group was 35.92 ± 0.3 at 15 minutes and returned toward baseline in treatment groups 30 minutes after injection. Respiratory rate in the treatment group significantly decreased following administration at 15 and 30 min compared with the control group. Results of this study showed that parenteral administration of pethidine with xylazine is fast-acting and effective sedation in animals are created while pethidine it is not effective for analgesia and side effects from this combination is acceptable and does not cause any danger to the animal.

Keywords: Pethidine hydrochloride, Xylazine hydrochloride, Analgesia, Sedation, Horse

