

Histopathological and immunohistochemical study of common patterns of hair follicle and epidermal tumors in dogs and cats

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The aim of this study is to identify common patterns of epidermal and hair follicular tumors in pet animals (dogs and cats). In review of Literature, a considerable scientific background is not found in our country. 50 samples were collected from skin lesions that the 15 samples of them were skin tumors (7 epidermal tumor samples and 8 sample hair follicle tumor) and histopathological and immunohistochemical studies were performed on these tumors. The hair follicle tumor samples included: Infundibular Keratinizing Acanthoma (IKA), Tricholemmoma-Bulb type (TLB), Trichoblastoma-Trabecular type (TBT), Trichoblastoma-Ribbon type (TBR), Trichoblastoma-Granular Cell type (TBG), Trichoblastoma-Medusoid type (TBM), Trichoepithelioma (TE), Malignant Trichoepithelioma (MTE) and the epidermal tumor samples were Basal Cell Carcinoma (BCC) and Cutaneous Lymphosarcoma (CL). In addition, non-neoplastic lesions so diagnosed such as hematomas, organized abscesses and tumor-like lesions. Hair follicular tumors were examined as routine histology methods (H&E), but the malignant epidermal tumors were performed by immunohistochemical studies. According to the immunohistochemical staining results obtained from this study - regardless of the type of animal - P53 expression levels in samples of basal cell carcinoma was assessed (1+) in one of the samples and (2+) in three of them and all cutaneous lymphosarcoma samples were (2+). Also Ck8 expression levels in samples of basal cell carcinoma was assessed (1+) in three samples and was (3+) in one of them, respectively. Ki67 expression levels in cutaneous lymphosarcoma samples was (1+) in two samples and (2+) in one of them. Finally, CD99 expression levels in all cutaneous lymphosarcoma samples were (2+). Combined diagnostic panels as Ck8/ P53 markers for basal cell carcinoma and P53/Ki67/CD99 markers for cutaneous lymphosarcoma diagnosis in dogs and cats are a useful diagnostic method.

Key Words: Dogs, Cats, Epidermal Tumors, Hair Follicular Tumors, Immunohistochemistry.

Identification of *Campylobacter* SPP. in apparently healthy dog's and cat's stool by multiplex PCR

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Campylobacteriosis is considered as a zoonotic disease and in some cases carrier are the sources of infection in humans. Dogs and Cats might have no Clinical signs but shed the bacteria in their feces and sometimes show samples of dogs and cats were examined. Primers were used related to 16S rRNA, gly A, mapA, and lpxA genes. First, positive samples which contained nucleotide sequence related to *Campylobacter* spp. were identified using universal Clinical sign (such as enteritis). Therefore the rapid and accurate diagnosis of infected animals is important. The objective of the present study was to detection of *Campylobacter* species in stool samples of dogs and cats referred to small animal hospitals in Tehran, Iran, using Multiplex PCR technique. In the present study 100 stool primers. Then identification of *Campylobacter* spp. was performed using multiplex PCR. PCR products were analyzed and scanned using gel electrophoresis and UV illuminator, respectively. Thirty nine samples were positive for *Campylobacter* spp. Of these, 2 and 11 samples were related to *Campylobacter jejuni* and *Campylobacter upsaliensis*, respectively. Statistical analysis was showed that *Campylobacter upsaliensis* infection was more common has a higher prevalence in cats compared to dogs. It was concluded that PCR technique can be used as a useful test for rapid diagnosis of *Campylobacter* spp. in stool samples of diseased or carrier animals.

Key words: *Campylobacter Jejuni*, *Campylobacter Upsaliensis*, Multiplex PCR.

Prevalence of sarcocystis infection in slaughtered cattle in Tabriz Alihemmati, A.¹, Shahbazi, A.², Fallah, E.³, Khanmohammadi, M.⁴, Asfaram, Sh.^{3,5*}

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Sarcocystis is one of the most prevalent parasites of the livestock. It is economically important and pathogenic to livestock. In this study Esophagus, heart and diaphragm muscles of 30 cattle collected from Tabriz abattoir. In corpses and samples were observed no macroscopic cysts. Microscopic cysts were identified by histopathological method and staining them by hematoxylin and eosine stain method and microscopically examined for presence of bradyzoite rate of infestation was in heart (Mean and Std.Error 8.1 ± 0.52), in esophagus (Mean \pm SEM 6.2 ± 0.44) and in diaphragm (Mean \pm SEM 1.2 ± 0.35). The most infective tissue was heart. A kit carried out DNA extraction. PCR conditions optimized for 18S rRNA amplification. We observed the microscopic cysts in Esophagus, heart, and diaphragm muscles. PCR analysis showed that microscopic cysts belonged to *Sarcocystis cruzi*.

Key words: *Sarcocystis*, Histopathology, PCR.

First report and Molecular identification of *Rhadinorhynchus* sp (Acanthocephala), based on 18S Ribosomal DNA Gene Sequences

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Acanthocephala are a group of invertebrate and are arthropod and vertebrate parasites with cosmopolitan distribution. These parasites cause of disease in the vertebrates like fishes. The investigation of these parasites is essential for the identification and prevention of infection. One method of organism taxonomy and identification is molecular identification along with morphology. In this study gastrointestinal parasites of 54 tuna fishes (*Thunnus albacares*) were studied in 2012. Acanthocephala which was a dominant parasite in these fishes, were separated. Acanthocephalan rDNA was extracted according to the modified CTAB method and nucleotide sequence studied in SSU_rRNA region. Iranian species sequences were compared with 21 species of Acanthocephala from GenBank. Phylogenetic relationship among species assessed by ML analysis. Result showed monophyly within Acanthocephala classes. Iranian species was sister group with *Rhadinorhynchus* sp and with 99% Bootstrap supported. Iranian species was belong to order of Echinorhynchida. The results of species morphology analysis were agreed with molecular results. This is the first report of Acanthocephalan parasite of tuna fish from Oman sea.

Key words: *Acanthocephala*, Phylogeny, Gastrointestinal Parasite, Tuna Fish, SSU - rRNA

Study on clinical signs and gross lesions due to individually and concurrent experimental infection of H9N2 avian influenza and *Ornithobacterium rhinotracheale* in SPF chickens

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In this study, clinical signs and gross lesions of (A/Chicken/Iran/ m.1/2010) H9N2 virus and (ORT -R87-7/1387) *Ornithobacterium rhinotracheale* bacteria alone and a co-infected group in SPF broiler chickens were investigated. Eighty 1-day-old specific pathogen-free White Leghorn chickens were randomly divided into four equal groups. At the age of three weeks, the chicks in the experimental groups were inoculated by virus and bacteria, individually or concurrent and in control group allantoic fluid was inoculated. We used PCR for detection of the bacteria and virus in various organs of experimentally infected broiler. Chickens of AIV and ORT co-infected group showed clinical signs such as ruffled feathers, depression, reduced appetite, cyanosis of wattles and combs, and respiratory distress. The gross lesions such as congestion in the tracheal, airsacculitis, fibrinous cast formation in tracheal and swollen kidneys were observed in birds of the AIV + ORT co-infected group. While ORT and AIV groups alone had minor clinical signs and gross lesions. The results of this study indicated that concurrent infectious with H9N2 virus and ORT bacteria could exacerbates clinical signs and gross lesions in infected chickens.

Key words: H9N2 Influenza Virus, *Ornithobacterium Rhinotracheale*, Co-Infection, Clinical Signs, SPF Chicken.

Antibacterial effects alcoholic extracts of (*Astragalus hamosus*) on gram positive and gram negative bacteria

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The space are aware of dangerous side effects of synthetic antibiotics, the more demand will be appeared on natural alternatives of this drug. Natural materials lessen the danger of these side effects; even they would left suitable and useful side effects. Plant pterygium is the one which has most applications in traditional medicine. The aim of this study is to investigate the anti bacterial effects of plant pterygium alcohol essence on pathogenic bacteria. In this experiment, pterygium plant was used with scientific name of *Astragalus hamosus*. After providing alcoholic essence of the plant the influence of mg/ml 400, mg/ml 200, mg/ml 100, mg/ml 50 densities was investigated on staphylococcus aureus, *Bacillus cereus*, *Escherichia coli* and *pseudomonas aeruginosa* in loop dispersion method. The least controlling density determination test of bacteria growth and minimum bacteria fatality was carried out using halo in tube method. Findings of this study indicated that *Astragalus hamosus* plant alcoholic essence prevents staphylococcus aureus, *Bacillus cereus*, *Escherichia coli* and *pseudomonas aeruginosa* bacteria growth. Measuring bacteria not growing was determined in loop dispersion method. Controlling effects on bacteria growth in loop dispersion method was better and more effective than disk dispersion method in similar densities. *Astragalus hamosus* plant alcoholic essence has considerable controlling effects on pathogenic bacteria. Clinical studies are needed to consider these essences.

Key words: *Astragalus Hamosus*, Loop Dispersion Method, MIC, MBC, Anti Bacterial.

Molecular characterization of F gene and protein of Newcastle disease viruses isolated in 2008 and 2009 in Iran

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Newcastle disease is one of the most important diseases in poultry with huge economical damages. It is possible to detect virulence of virus base on molecular techniques and sequence of F gene. In this study, Sequence of 1674 nucleotide acid in cleavage site of F gene of Newcastle disease virus was analyzed for 10 isolates in industrial poultry. These isolates were obtained from endemic of very virulent Newcastle disease in Iran during 2009 and 2010 which have caused high mortality in broiler, breeder and layers along with high egg production drop in breeders and layers. Amino acid sequences were compared phylogenetically with those of previously reported in Iran and also with the gene bank. These isolates show phylogenetically distinction from previous isolates reported in Iran. These isolates show similarity with Chinese and Israeli isolates in gene bank.

Key words: Fusion Gene, Newcastle Disease Virus, Phylogenetic Analysis.

Study on the incidence of linguatulosis in slaughtered small ruminants in Shahriar aboittoir

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Linguatula serrata is a worldwide distribution parasite. Dog and other carnivores are as final hosts and ruminans, equins and rodents are as intermediate hosts. Human is also as both definitive and intermediate hosts. In this study, the infection rate to *Linguatula serrata* and its relationship with some factors were investigated in slaughtered sheep and goats in Shahriar aboittoir. To this end, mesenteric lymphatic nodes of 579 sheep and 195 goats were collected during 5 months randomly. Nymphs were followed through maceration of lymph nodes and digestion of them in digestive solution. The results showed that the infection rate was 16.23% in sheep and 53.33% in goats. Statistical analysis showed more infection rate in goats than sheep. Moreover, there was a significant relationship between sex and rate of the infection and Linguatulosis in female animals was more than males. Meanwhile, statistical analyses showed that the infection rat increased with age of animals. Therefore, regarding to presence of the infection in studied animals and its probable transmission to human, suitable meat inspections, and full-cooking of meat and animal based products can control and prevent of the infection.

Key words: *Linguatula Serrata*, *Linguatulosis*, *Small Ruminants*, *Shahriar*.

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