

## **CONTENT PAGE OF THE ISSUE JANUARY OF 2009**

### **EQUINE**

*K. Nagy, G. Bodó:* Aetiology and treatment of crib-biting/wind sucking in horses: new opportunities. Summary / 8

*L. Szeredi, M. Tenk, Sz. Jánosi, V. Pálfi, H. Hotzel, K. Sachse, A. Pospischil, M. Bozsó, R. Glávits, T. Molnár:* Survey of equine abortion and perinatal foal losses in Hungary during a 3 year period (1998-2000). Short secondary communication / 17

### **RUMINANTS**

*S. Kukovics, E. Gergácz:* Artificial insemination of sheep on farms / 21

### **POULTRY**

*P. Laczay:* Poultry meat inspection and judgements: legislative rules and lessons of a lawsuit / 27

### **SMALL ANIMALS**

*Cs. Jakab, M. A. Szász, A. Kiss, Zs. Schaff, M. Rusvai, Á. Szabára, J. Kulka:* Claudin-expression studies in lung metastases of canine solid mammary gland carcinomas / 33

*M. Zwick, C. Hübner, Ch. Peppler, M. Kramer:* Surgery of the liver, gallbladder and biliary ducts in small animals / 42

## **ZOO ANIMALS**

*K. Kovács, I. János, E. Papp*: Laser assisted treatment and filling of an exposed pulp cavity of a four-years old African elephant bull (*Loxodonta africana*). Case report / 48

## **PET ANIMALS**

*J. Gál, Z. Szabó, P. Pazár, G. Andócs, L. Balogh, N. Oppe*: Nano SPECT/CT gross anatomy of the veiled chameleon (*Chamaeleo calyptratus*) and possibilities for further research / 53

## **TOXICOLOGY**

*J. Lehel*: Poisonings of animal origin. Literature review. 6. Poisonings of mammalian and bird origin / 60

## **LETTER TO THE EDITOR**

Rare cardiac valve abnormality (Cs. *Jakab, Gy. Balka*) / 47

## **IN MEMORIAM**

Antal Forray (1923–2008) (*P. Vass*) / 52

György Horváth (1928–2008) (*L. Solti*) / 64

K. Nagy – G. Bodó:

## **AETIOLOGY AND TREATMENT OF CRIB-BITING/WIND-SUCKING IN HORSES: NEW OPPORTUNITIES**

The authors describe the recently available treatment possibilities for crib-biting, and the principles of a potential behaviour therapy. Crib-biting/wind-sucking is considered as one of the main abnormal stereotypic behaviours in horses, especially from practical point of view, it is still lacking of elaborated medication. Stereotypic behaviour and human obsessive-compulsive disorder share lot of analogies. The most successful treatment for the obsessive-compulsive disorder is based on behaviour therapy combined with pharmacotherapy. Instead of using the recent available treatments separately, a combined use of different possibilities (surgical, behavior and medical treatment), could probably increase the success of treating or even preventing crib-biting/wind-sucking.

S. Kukovics – E. Gergátz:

### **ARTIFICIAL INSEMINATION OF SHEEP ON FARMS**

The artificial insemination (AI) in sheep has shrunken to minimum level in Hungary during the last decades. While more than 60% of ewe population were inseminated during the second part of 1960's, only 2% of the ewes were inseminated artificially. The authors the data and results of 10 sheep farms (with about 8–9 thousand ewes belonging to various breeds) using AI.

They established that the artificial insemination could be used with very high efficiency even in the present farming conditions, the results using this method could even exceed the 90%. According to the results, the insemination carried out by the shepherd or the owner had better success than the work made by the service companies.

P. Laczay:

### **POULTRY MEAT INSPECTION AND JUDGMENTS: LEGISLATIVE RULES AND LESSONS OF A LAWSUIT**

Following a short overview of the legislative rules of poultry meat inspection, the author outlines the main lessons of a lawsuit due to condemnation of great number of broilers because of extended discoloration. It is emphasised that in a judgement, also the possible causes of conditions rendering the meat as unfit for human consumption should always be revealed.

Cs. Jakab – M. A. Szász – A. Kiss – Zs. Schaff – M. Rusvai – Á. Szabára – J. Kulka:

### **CLAUDIN-EXPRESSION STUDIES IN LUNG METASTASES OF CANINE SOLID MAMMARY GLAND CARCINOMAS**

The present study has evaluated the expression of claudin-1, -2, -3, -4, -5, and -7 in 20 cases of lung metastases of grade III simple infiltrating carcinomas of mammary gland in dogs (*Figure 1, 2*), and compared the results to normal mammary glands'and grade III simple infiltrating carcinomas expression on protein level. The results of the present study demonstrate strong expression of claudin -4, and -7; moderately expression of claudin-3; weak expression of claudin-5; and deletion of claudin-1 and -2 proteins in metastases of solid simple infiltrating carcinomas of mammary gland in canine. The tumour samples were fixed in 8% neutral buffered formalin solution for 24 hours at room temperature, dehydrated in a series of ethanol and xylene and

embedded in paraffin. The 3–4 µm thick sections were routinely stained with hemalaun and eosin. For immunosistochemistry the sections (3–4 µm) were cut from paraffin blocks, and were deparaffinized in xylene and graded ethanol. After treatment with appropriate antigen retrieval (Target Retrieval Soluton, DAKO, Glostrup, Denmark, pH 6; microwave oven for 30 minutes), the sections were treated with the primary antibodies (Zymed Inc.) against *claudin-1* (diluted 1:100, rabbit *polyclonal*), *claudin-2* (diluted 1:80, mouse *monoclonal*), *claudin-3, -7* (diluted 1:80, rabbit *polyclonal*), *claudin-4*, and *-5* (diluted 1:100, mouse *monoclonal*) for 60 minutes at room temperature. Immunohistochemical staining was performed using the streptavidin-peroxidase procedure. Antigen-bound primary antibody was detected using standard avidin-biotin immunoperoxidase complex (DAKO LSAB2 Kit). The chromogen substrate was 3,3-diamino-benzidine tetrahydrchloride (DAB substrate-chromogen, DAKO, Denmark) in each case. Mayer's hemalaun was used for counter-staining. For each claudin a negative control with omission of the primary antibody was included. We used a human external positive controls (13). The number of positive cells was calculated as follows: 10 randomly selected areas per slide were analyzed using 20x objective with 100 cells counted in each field. The scoring standardized for each group was as follows: 5 = 80 to 100%, 4 = 60 to 80 5, 3 = 40 to 60%, 2 = 20 to 40%, 1 = 5 to 20 %, and 0 = 0 to 5 % of the cells showed positive reactions. The metastases were totally negative for claudin-1 (*Figure 3*) and -2 proteins. Claudin-3, -4, -5, and -7 were detected as intense membrane reaction in metastases: *Claudin-3*

scoring: 2,5 [range = 1,0 – 4,0]; 5 – 80 % tumour cell positivity (*Figure 4*), *Claudin-4* scoring: 5; 80–100% (!) tumour cell positivity (*Figure 5, 6*), *Claudin-5* scoring: 1,4 [range = 0–2]; 0–40% tumour cell positivity (*Figure 7*) and *Claudin-7* scoring: 3,9 [range=3–5]; 60–90% tumour cell positivity (*Figure 8*). The peritumoural intact epithelial cells of the alveoli-, bronchioli and bronchi were positive for claudin-1, -3, -4 and -7 proteins and were negative for claudin -2 and -5 molecules. The mesothelial cells of the pleura were negative for all claudins. Recently claudin-3, and -4 were identified as receptors for *Clostridium perfringens* enterotoxin (20). In our study the malignant metastatic neoplastic epithelial cells of mammary glands highly expressed the claudin-4 protein, receptor of the CPE, which may sensitize these secuder tumours to CPE-mediated cytolysis. Further studies are needed to investigate a possibility of an anti-tumour therapeutic approach by CPE in cases of metastases of solid simple infiltrating carcinomas of mammary glands in dogs and careful studies need to be performed to accurately determine the presence, and nature of the immune response against CPE when administrated via intratumoural and systemic routes.

In our recent investigation, angiogenesis (*Figure 9*) was evaluated and quantified by immunohistochemical evaluation of microvessel density (MVD) using claudin-5 as marker for vascular endothelium in 20 distant (lungs) metastases from grade III simple infiltrating carcinomas of mammary glands in dogs (*Figure 10, 11*). The endothelial cells of the intrapulmonal vessels and the intratumoural microvessels were positive for claudin-5 molecule. Computer

image analysis was used to measure the intratumoural MVD (*Table*) (15). For claudin-5, mean MVD was in cases of metastases of solid simple carcinoma 6.22 pixel % per x 200 fields (range 4.79–7.49). This result is almost equivalent, moreover weakly higher than in our earlier study the mean MVD in case of grade III simple carcinoma: 5.33 pixel % per x 200 fields (range 4.03–6.33). The antivascular therapy of the metastases of grade III simple infiltrating carcinomas of mammary glands in dogs may be the either possibility of the anti-tumour therapies.

K. Kovács – I. János – E. Papp:

**LEASER ASSISTED TREATMENT AND FILLING OF AN EXPOSED PULP CAVITY OF A FOUR-YEAR AFRICAN ELEPHANT BULL (*LOXODONTA AFRICANA*). CASE REPORT**

The authors used a novel approach for the management of exposed pulp cavity in 4 years old African elephant (*Loxodonta africana*). Due to laser assisted treatment the disinfection of the pulp cavity and the haemostasis could be processed at one step, reducing significantly the time of the intervention. The laser light acts as immediate local pain killer, thus the risk of anaesthesia could be eliminated, and the whole procedure could be included in the usual daily protected contact training.

J. Gál – Z. Szabó – P. Pazár – G. Andócs – L. Balogh – N. Oppe:

**NANO SPECT/CT GROSS ANATOMY OF THE VEILED CHAMELEON (*CHAMAELEO CALYPTRATUS*) AND POSSIBILITIES FOR FURTHER**

## **RESEARCH**

The authors reveal the gross anatomy of the veiled chameleon (*Chamaeleo calyptratus*) by nano SPECT/CT technology. The localization of intact, healthy organs and their anatomical characteristics are given. Possible pictographic differences of certain anatomical structures revealed by radiography and CT investigation practices are also described.

J. Lehel:

## **POISONINGS OF ANIMAL ORIGIN. LITERATURE REVIEW. 6. POISONINGS BY MAMMALS AND BIRDS**

The review gives a short overview of venomous mammalian (platypus, shrew, etc.) and avian species, describes their distribution, venom and stinger apparatus, clinical symptoms of poisonings and treatment possibilities.