

2nd Joint European Congress of the ESVP, ESTP and ECVP

32nd Meeting of the European Society of Veterinary Pathology

12th Meeting of the European Society of Toxicologic Pathology

25th Meeting of the European College of Veterinary Pathology

27th – 30th August 2014,
Berlin, Germany

CUTTING EDGE

PATHOLOGY

Programme and Abstract Book



Poster Presentations ESVP/ECVP

P071 PATHOLOGICAL CHANGES OF COLON IN THE TNBS MODEL OF COLITIS IN RATS TREATED WITH FUNCTIONAL FOOD CONTAINING PROBIOTIC/SYMBIOTIC FORMULATION

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Introduction: Lactic acid bacteria may have a preventive role in inflammatory bowel diseases due to inappropriate and continuing inflammatory response to commensal microbes in a genetically susceptible host. The aim of this study was to evaluate the histopathological changes of the colon in rats with chemically induced colitis, after oral administration of functional food product containing non-encapsulated and encapsulated probiotic/synbiotic.

Materials and Methods: Three groups of female Wistar rats (n=6, 180-250 g, 10-14 weeks old) which TNBS (trinitrobenzene-sulphonic acid) colitis was induced, ayran containing free probiotic/synbiotic and encapsulated synbiotic, respectively, was administered orally, once daily (8.5-8.9 log cfu/g of the food product) and control group treated with drinking water and plain ayran were used. Histopathological examination was performed on colon segments that were fixed in 10% (v/v) formalin, embedded in paraffin and 3-5 µm sections were stained with haematoxylin-eosin.

Results: Histopathological examination of the colons of rats receiving ayran containing synbiotic microparticles showed significant differences compared with the control groups. Namely, ulcerations on mucosa and sub-mucosa, accompanied by extensive inflammatory infiltrate and congested blood vessels, were observed in the non-treated group, whereas higher integrity of mucosal architecture of colon tissue was apparent when encapsulated synbiotic was administered.

Discussion (and/or Conclusions): Histopathological examination of colon has shown that ayran containing microencapsulated synbiotic is a convenient anti-inflammatory therapy. These results are confirmed with biochemical examination of myeloperoxidase activity.

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P072 THE INDUCTION OF CHRONIC ULCERATIVE COLITIS IN RATS – OBTAINING AN ANIMAL MODEL FOR TESTING THE EFFICACY OF DRUGS

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Introduction: In the search for drugs used in the treatment of gastrointestinal inflammation in human, animal models are used. In these models, intestinal lesions, which are similar to human Inflammatory Bowel Disease (IBD), are induced.

Materials and Methods: The experiment was conducted on 80 female Wistar rats. The animals were randomised into 4 groups, i.e. A, B, C, and D depending on elimination day. In each group, 5 females received rectally 50% ethyl alcohol, and ethanolic TNBS (2, 4, 6-trinitrobenzene sulfonic acid) at the doses of 12.5 mg / kg, 25 mg / kg, and 50 mg / kg body mass. Group A was euthanised after 28 days, group B after 21 days, group C after 14 days, and group D after 7 days. During dissection, a distal part of the colon of each animal was collected. After the macroscopic evaluation, tissues were fixed in a 4% neutral buffered formaldehyde solution, dehydrated, embedded in paraffin, and stained with HE.

Results: The autopsy revealed hyperaemia, erosions, and ulceration in the colon wall. Adhesions of the bowel wall with adjacent organs were also observed. Histopathology additionally showed fine-cell infiltration in each layer of the colon wall, stimulation of the lymphoid nodules, and mucosal regenerative processes. The incidence of these lesions decreases over time starting from exposure, but increases with increasing doses of TNBS.

Conclusions: The use of TNBS-alcoholic solutions in the induction of chronic ulcerative colitis in rats is an inexpensive and technically simple method for obtaining an animal model.

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