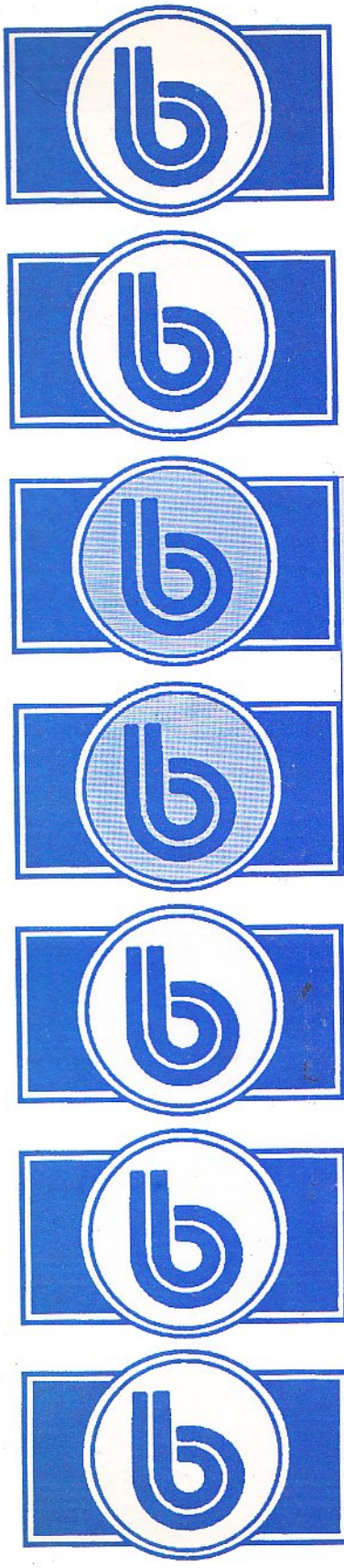

Hrvatsko biološko društvo
Croatian Biological Society

ŠESTI KONGRES BIOLOGA HRVATSKE

s međunarodnim sudjelovanjem

Opatija, Hrvatska, 22.-26. rujna 1997.

THE SIXTH CONGRESS OF CROATIAN BIOLOGISTS

with international participation

Opatija, Croatia, 22-26 September 1997

ZBORNIK SAŽETAKA PRIOPĆENJA

PROCEEDINGS OF ABSTRACTS

Zagreb, 1997.

structure typical for the vertebrates, except the intestine in which the villi and the circular folds penetrate deeply into the lumen, so mucosa is more like a net of connective tissue and epithelial cells. The submucosa is a layer of connective tissue with blood vessels and nerve fibers, and it has not been seen in the esophagus and the intestine. The muscular layer consists of two layers: circular and longitudinal. In the cranial parts of the digestive tract these muscles are like skeletal muscles, while in the caudal parts smooth muscles have been found. The outermost layer of viscerals organs is adventitia which consists of connective tissue. In the caudal parts of the digestive tract, there is a serosa or coating of reflected peritoneal mesothelium.

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Određivanje statusa gena za malignu hipertermiju metodom lančane reakcije polimerazom

Maligna hipertermija (stres sindrom) je nasljedna metabolička bolest u svinja koja se očituje prilikom podvrgavanja svinja stresu. Mutacija u genu RYR 1 koji se nalazi na šestom kromosomu uzrok je poremećaja protoka kalcijevih iona u mišićnim stanicama tijekom mišićne kontrakcije. To dovodi do jakih mišićnih kontrakcija, povećanja tjelesne temperature, acidoze i smrti. Metoda testiranja svinja udisanjem halotana napuštena je zbog nepouzdanosti, jer otkriva samo recesivne homozigote (n/n) dok heterozigoti (N/n) koji nisu podložni bolesti ostaju u uzgoju i prenose mutirane gene na potomstvo. Molekularna metoda lančane reakcije polimerazom omogućuje brzo i točno otkrivanje nositelja mutiranog gena. Temelji se na umnažanju dijela gena, cijepanju umnožene DNA restrikcijskim enzimom, razdvajanje na agaroznom gelu te očitavanju rezultata pod UV svjetlom. Istražili smo uzorke sa dviju farmi u Hrvatskoj, a dobivene rezultate usporedili s rezultatima testiranja u SAD i Europi. U izlaganju će biti objašnjenje prednosti ove metode te mogućnosti stvaranja modela selekcije svinja sa ciljem potpunog ili djelomičnog uklanjanja mutiranog gena.

Determination of malignant hyperthermia status in swains using polymerize chain reaction

Malignant hyperthermia (stress syndrome) is a genetic metabolic disease of swine that occur in stress situations (e. g. transportation of animals, bad farming practice, etc.). Mutation in RYR1 gene on sixth chromosome causes abnormality in calcium flow in muscle during contraction. This leads to muscle rigidity, high fever, acidosis and death. The older method of halothan testing is abandoned because of its unreliability. It determines only abnormal homozygotes (n/n), while heterozygotes (N/n) remain undetected. Polymerize chain reaction (PCR) enables quick and reliable diagnosis of mutation carriers. It is based on amplifying sequences of DNA, restriction of amplified sequence with restriction enzyme, agarose gel electrophoresis and determination of

results on a UV transilluminator. In our research we have examined samples from two farms in Croatia. Results are compared with testing results from USA and Europe. The preference of this method over halothane testing in selection of breeding stocks will be explained.

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(71)

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Kvantitativna analiza strukturnog heterokromatina u djece s akutnom leukemijom i malignim limfomom

Biološka uloga strukturnog heterokromatina u genomu čovjeka predmet je brojnih spekulacija. Od posebnog su interesa istraživanja u pacijenata s malignim bolestima i pretpostavka da heterokromatinske varijante povećavaju rizik maligne transformacije. Cilj ovog istraživanja je procjena povezanosti kvantitativnih promjena strukturnog heterokromatina i maligne transformacije u djece s akutnom leukemijom i limfomom. U radu su prikazani rezultati istraživanja varijabilnosti dužine strukturnog eterokromatina kromosoma 1, 9 i 16 u 50-ero djece s malignim emopatijama te u 21 zdravog djeteta kontrolne skupine. Analiza je izvršena na preparatima dobivenim rutinskom metodom kulture stanica periferne krvi i bojanim G-pruganjem. Korištena je objektivna metoda linearnog mjerenja. Istraživanjem je ustanovljena statistički značajno smanjena dužina heterokromatinskih segmenata kromosoma 1 ($p < 0,001$) u skupini djece s malignim hemopatijama u odnosu na kontrolu, dok nisu nađene razlike u dužini heterokromatinskih segmenata kromosoma 9 i 16. Ovi rezultati upućuju na povezanost kvantitativnih promjena strukturnog heterokromatina i procesa maligne transformacije u djece s akutnom leukemijom i limfomom.

Quantitative analysis of constitutive heterochromatin in children with acute leukemia and malignant lymphoma

The biological role of the constitutive heterochromatin in the human genome is a subject of numerous speculations. Of the particular interest are the investigations in the group of patients with malignant diseases, and the suggestion that heterochromatic variants increase the risk of malignant transformation. The aim of this investigation was to determine the correlation of quantitative changes of the constitutive heterochromatin and malignant transformation in children with acute leukemia and lymphoma. The length variability of the constitutive heterochromatin of chromosomes 1, 9 and 16 was analysed in 50 children with haematological malignancies and in 21 healthy controls. The analysis was carried out on slides obtained by routine method of peripheral blood culture and stained for G-banding. The objective method of linear measuring was used. A statistically significant shorter length of the heterochromatic regions of chromosome 1 was found in the patients compared with the control group ($p< 0,001$), while there was no difference in the heterochromatic segment length of chromosomes 9 and 16. These results suggest a