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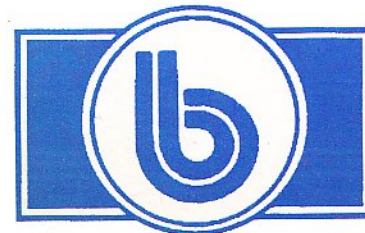
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**ZBORNIK
SAŽETAKA PRIOPĆENJA**



**PROCEEDINGS
OF ABSTRACTS**



Zagreb, 1997.

meiotic division... Genetic manipulation of yeast cells is greatly facilitated by successful combination of classical and recombinant DNA techniques and yeast artificial chromosomes (YACs) are used in analyses of complex genomes, including human. Sequencing of the complete yeast genome, which was completed last year, symbolically represents the methodological and conceptual milestone in modern genetics. What is the future for yeast, as an experimental organism, in these new circumstances?

(5)

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Stres sindrom: ryanodinski receptor (RYR1) gen i maligna hipertermija u ljudi i svinja

Stres sindrom (maligna hipertermija- MH) je posljedica potencijalno smrtonosnog odgovora na anestetike, a razlog joj je genetska predispozicija jedinke. Ryanodinski receptor (RYR1) gen u skeletnoj muskulaturi vezan je na nastanak MH u ljudi i svinja. U jedinki genetički predodređenih za razvitak MH anestezija dovodi do kontrakcije skeletne muskulature, pojačanog metabolizma, povišenja temperature i simptoma čije ne spriječavanju razvoju dovodi do oštećenja tkiva i smrti. Nastup MH u svinja dovodi do stresom inducirane smrti ili do znakovito smanjene kakvoće mesa. Poremećenost prometa Ca^{++} u kanalčićima sarkoplazme mišićne stanice (RYR1 receptor) prokazana je razlogom nastanka MH u ljudi i svinja u biokemijskim, fiziolozijskim i genetskim istraživanjima uzročnosti bolesti. U svinja jednostavna mutacija u RYR1 genu jest razlogom razvoja bolesti u svim uzgojima, dok se ipak čini da je u ljudi heterogena genetska osnovica sindroma MH u obiteljima. Prikazat ćemo rezultate istraživanja MH PCR tehnologijom u uzgojima svinja u Hrvatskoj i usporediti ih s istim u svijetu.

Stress syndrome: ryanodine receptor (RYR1) gene and malignant hyperthermia in human and swine

Malignant hyperthermia (MH) is a devastating, potentially lethal response to anesthetics that occurs in genetically predisposed individuals. The skeletal muscle ryanodine receptor (RYR1) gene has been linked to human and porcine MH. In humans genetically predisposed to MH anesthesia can induce skeletal muscle rigidity, hypermetabolism, and high fever, which if not immediately reversed, can lead to tissue damage or death. The corresponding condition in swine leads to stress-induced deaths and devalued meat products. Abnormalities in the Ca^{2+} release channel of skeletal muscle sarcoplasmic reticulum (the ryanodine receptor) have been implicated in the cause of both the porcine and human syndromes by physiological and biochemical studies and genetic linkage analysis. In swine, a single founder mutation in RYR1 can account for all cases of MH in all breeds while in human families a series of different RYR1 mutations are likely to be uncovered indicating a heterogeneous genetic basis for the human syndrome.

Results of studies with PCR performed to detection of occurrence of MH among swine breeds in Croatia will be presented.

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Razvoj imunoreaktivnosti u djece

Pregledno je prikazana novija literatura o posebnostima imunoreaktivnosti u novorođenčadi i djece. Nakon kratkog razmatranja općih obilježja imunoreakcija, govori se o stanicama u urođenoj imunosti, dakle o polimorfonuklearnim leukocitima te posebno o neutrofilnim, eozinofilnim i bazofilnim leukocitima i mastocitima. Potom se razmatraju svojstva monocita i makrofaga te urođenoubilačkih stanica. Govori se i o humoralnim komponentama urođene imunosti, tj. o sustavu komplemента, fibronektinu i C-reaktivnom proteinu. Nakon razmatranja suvremenih shvaćanja o osobinama urođene imunosti djece govori se o specifičnim, stečenim imunoreakcijama. Najprije su prikazane antigen-prezentirajuće stanice (makrofagi, dendritične stanice), a potom humoralna imunost, tj. sistemske funkcije B-limfocita i imunoglobulini. Prikazane su i stečene celularne imunoreakcije s posebnim osvrtom na razne aspekte fenotipa i funkcije T-limfocita (TCR-1, površinski fenotip, "memorijski" i "naivni" T-limfociti, proliferacija in vitro, citotoksičke efektorske funkcije, pomoćnički i supresorski T-limfociti, citokini). Kratko su razmotreni i novi podaci o lokalnoj imunosti u neonatalnom razdoblju. Na kraju se daju zaključci koji sažimlju glavna obilježja imunoreakcija u novorođenčadi i male djece.

Development of immuneresonsiveness in children

Recent literature on the specificities of immune responsiveness in newborns and children is reviewed. After brief presentation of the general features of immunoreactions and an account is given of the cells in innate immunity i.e. of polymorphonuclear leukocytes and especially of neutrophiles, eosinophiles and basophiles as well as mastocytes. Then, the features of monocytes, macrophages and natural killer cells are discussed, as well as the humoral components of innate immunity, i.e. the complement system, fibronectin and c-reactive protein. Current concepts of the characteristics of specific, acquired immune reactions are also presented. Antigen-presenting cells (macrophages, dendritic cells) are described first, followed by humoral immunity, i.e. systemic functions of B-lymphocytes and immunoglobulines. Acquired cellular immunoreactions are discussed, with special reference to various aspects of the phenotype "memory" and "naive" T-lymphocytes, proliferation in vitro, cytotoxic effector functions, helper and supressor T-lymphocytes, cytokines). A brief account is also given of the latest data on local immunity in the neonatal period. In conclusion, the main features of immunoreactions in newborns and small children are summarized.
