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Dzepina I, Stanec Z, Skrbic S, Hulina D, Ivrlac R, Unusic J, et al. One-stage reconstruction of war wounds with free osteocutaneous flaps. Br J Plastic Surg 1997;50:81-7.

Institute for Plastic Reconstructive & Breast Surgery, University Hospital Center Zagreb, 10000 Zagreb, Croatia

Thirty-one patients with traumatic osteocutaneous defects of the extremities sustained during the war in Croatia and Bosnia and Herzegovina were treated. Injuries were categorised using the Mangled Extremity Syndrome Index (MESI). The average length of bone defect was 5.9 cm (range 4-12 cm). Patients were divided in two groups according to the time they had reconstruction with a free osteocutaneous flap: group 1, within 6 days after injury, and group 2, after more than 6 days. The mean time to reconstruction in group 2 was 5.2 weeks. Average time to solid bone union was 13.3 weeks in group 1 and 16.6 weeks in group 2. Functional outcome was better in group 1, with fewer complications, smaller number of operations and shorter hospital stay. One-stage reconstruction of osteocutaneous defects with free composite flaps provides reliable treatment solution with good functional outcome.

Jelakovic B, Marekovic Z, Krhen I, Benkovic J, Cikes N, Cvorisec D, et al. Antibodies to Tamm-Horsfall protein in patients treated with extracorporeal shock-wave lithotripsy (ESWL). Clin Chimica Acta 1996;256:95-102.

Zagreb University School of Medicine, University Hospital Center Zagreb, 10000 Zagreb, Croatia

The values of antibodies to Tamm-Horsfall protein in patients with nephrolithiasis treated with extracorporeal shock wave lithotripsy (ESWL) were determined by direct enzyme immunoassay. No differences were observed for the IgG and IgM classes of antibodies between the groups of healthy subjects and patients with nephrolithiasis before, and 30 and 60 days after ESWL. The values of the IgA class determined 30 days after treatment were higher ($P < 0.05$) in patients, which could be due to the stimulation of the immune system. The highest values of antibodies to Tamm-Horsfall protein were obtained in both groups in the test with secondary antibodies directed toward IgM class, which implicated the presence of cross-reactive antibodies. Determination of antibodies to THP subunits isolated from urine of patients with nephrolithiasis should be performed.

Kleijnen MF, Huppa JB, ^{*}Lucin P, Mukherjee S, Farrell H, Campbell AE, et al. A mouse cytomegalovirus glycoprotein, Gp34, forms a complex with folded class-I MHC molecules in the ER which is not retained but is transported to the cell-surface. EMBO J 1997;16:685-94.

^{}Rijeka University School of Medicine, Department of Physiology & Immunology, 51000 Rijeka, Croatia*

Murine cytomegalovirus (MCMV) interferes with antigen presentation by retaining major histocompatibility complex (MHC) class I molecules in the endoplasmic reticulum (ER). Here we identify and characterize an MCMV-encoded glycoprotein, gp34, which tightly associates with properly conformed MHC class I molecules in the ER. Gp34 is synthesized in large quantities during MCMV infection and leaves the ER only in association with MHC class I complexes. Many but not all class I molecules are retained in the ER during the early phase of MCMV infection, and we observed an inverse correlation between amounts of gp34 synthesized during the course of infection and class I retention. An MCMV deletion mutant lacking several genes, including the gene encoding gp34, showed increased class I retention. Thus, MCMV gp34 may counteract class I retention, perhaps to decrease susceptibility of infected cells to recognition by natural killer cells.

^{*}Knotek M, Cejvan K, Jaksic O, Lasic Z, Skoric B, Brkljacic V, Banfic H. The effect of big endothelin-1 in the proximal tubule of the rat kidney. Br J Pharmacol 1997;120:625-30.

**Zagreb University School of Medicine, Department of Physiology, 10000 Zagreb, Croatia*

An obligatory step in the biosynthesis of endothelin-1 (ET-1) is the conversion of its inactive precursor, big ET-1, into the mature form by specific, phosphoramidon-sensitive, endothelin-converting enzyme (ECE). The role of the enzymatic conversion of big ET-1 into ET-1 in eliciting the functional response (generation of 1,2-diacylglycerol) to big ET-1 was studied in the rat proximal tubules. In renal cortical slices incubated with big ET-1, pretreatment with phosphoramidon (an ECE inhibitor) reduced tissue immunoreactive ET-1. In freshly isolated proximal tubule cells, big ET-1 stimulated the generation of 1,2-diacylglycerol (DAG) in a time- and dose-dependent manner. Neither phosphoramidon nor chymostatin, a chymase inhibitor, influenced the generation of DAG evoked by big ET-1. Big ET-1-dependent synthesis of DAG was found in the brush-border membrane. It was unaffected by BQ123, an ET(A) receptor antagonist, but was blocked by bosentan, an ET(A,B)-nonselective endothelin receptor antagonist. These results suggest that the proximal tubule is a site for the direct effect of big ET-1 in the rat kidney. The effect of big ET-1 is confined to the brush-border membrane of the proximal tubule.

Kupesic S, Kurjak A. The assessment of normal and abnormal luteal function by transvaginal color doppler sonography. Eur J Obstetrics Gynecol & Reproduct Biol 1997;72:83-7.

Zagreb University School of Medicine, Sveti Duh Hospital, Department of Obstetrics & Gynecology, 10000 Zagreb, Croatia

We evaluated intraovarian resistance index (RI) in 47 healthy fertile volunteers with ovulatory cycles, 28 patients with luteal phase defect (LPD) and four patients with luteinized unruptured follicle (LUF Sy). Transvaginal color Doppler of the follicular and corpus luteum blood flow and plasma progesterone (P) levels were determined. Significantly higher intraovarian artery RI ($p < 0.001$) was obtained for LPD group than for controls during the luteal phase. In the control group both follicular and corpus luteum RI were significantly lower ($P < 0.001$) on the dominant side, while in LPD group no difference between the sides occurred. Mean P levels were lower ($P < 0.001$) in the LPD group (6.9 ± 2.3 ng/mL) than in controls (24.1 ± 11.4 ng/mL). In all the LPD patients histopathology revealed delayed endometrial pattern, while normal endometrial dating was found in all the control patients ($n=15$). In the patients with LUF Sy ($n=4$) similar RI values were obtained in the follicular and corpus luteum phase. There was no difference between the sides in the intraovarian RI, while subnormal values of P were obtained in all the patients (14.1 ± 6.2 ng/mL). Transvaginal color Doppler may predict the functional capacity of the corpus luteum.

***Salaj-Smic E, Marsic N, Trgovcevic Z, Lloyd RG. Modulation of EcoKI restriction in vivo: role of the lambda-gam protein and plasmid metabolism. J Bacteriology 1997;179:1852-1856.**

**Rudjer Boskovic Insitute, 10000 Zagreb, Croatia*

Two novel types of alleviation of DNA restriction by the EcoKI restriction endonuclease are described. The first type depends on the presence of the gam gene product (Gam protein) of bacteriophage lambda. The efficiency of plating of unmodified phage lambda is increased when the restricting E. coli K-12 host carries a gam(+) plasmid. The effect is strong in wild-type strains and in the presence of sbcC and recA mutations. In all cases, Gam-dependent alleviation of restriction requires active recBCD genes of the host and recombination (red) genes of the infecting phage. The enhanced capacity of Gam-expressing cells to repair DNA strand breaks might account for this phenomenon. The second type is caused by the presence of a plasmid in a restricting host lacking RecBCD enzyme. Commonly used plasmids such as the cloning vector pACYC184 can produce such an effect in strains carrying recB single mutations or in recBC sbcBC strains. Plasmid-mediated restriction alleviation in recBC and sbcBC strains is independent of the host RecF, RecJ, and RecA proteins and phage recombination functions. The presence of plasmids can also relieve restriction in recD strains. This effect depends, however, on the RecA function in the host.

***Simic G, Kostovic I, Winblad B, Bogdanovic N. Volume and number of neurons of the human hippocampal formation in normal aging and Alzheimer's disease. J Comp Neurol 1997;379:482-94.**

**Zagreb University School of Medicine, Department of Anatomy and Croatian Institute for Brain Research, 10000 Zagreb, Croatia*

Changes owing to aging and Alzheimer's disease (AD) in the volumes of subdivisions of the hippocampus and the number of neurons of the hippocampal formation, 18 normal brains and 13 AD brains were analyzed on 50mm-thick cresyl-violet sections. The mean total volume of the principal subdivisions of the hippocampal formation (fascia dentata, hilus, CA3-2, CA1, and subiculum) showed a negative correlation with age in normal subjects ($r=-0.56$, $P<0.05$), and a 32% mean reduction in the AD group compared with controls ($P<0.001$). There was an inverse relationship between the age of normal subjects and the number of neurons in CA1 ($r=-0.84$, $P<0.0001$) and subiculum ($r=-0.49$, $P<0.05$) but not in other subdivisions. Pronounced AD-related reductions in neuron number were found only in the subiculum and the fascia dentata. Compared with controls, both losses represented 23% of neurons ($P<0.05$). These results 1) confirm that AD is a qualitatively different process from normal aging, and 2) reveal the regional selectivity of neuron loss within the hippocampal formation in aging and AD.

Vangijlswijk RPM, Wiegant J, Vervenne R, Lasan R, Tanke HJ, Raap AK. Horseradish peroxidase-labeled oligonucleotides and fluorescent tyramides for rapid detection of chromosome-specific repeat sequences. Cytogenetics & Cell Genetics 1996;75:258-62.

**Department of Pediatrics, University Hospital Center Zagreb, 10000 Zagreb, Croatia*

We present a sensitive and rapid fluorescence in situ hybridization (FISH) strategy for detecting chromosome-specific repeat sequences. It uses horseradish peroxidase (HRP)-labeled oligonucleotide sequences in combination with fluorescent tyramide-based detection. After in situ hybridization, the HRP conjugated to the oligonucleotide probe is used to deposit fluorescently labeled tyramide molecules at the site of hybridization. The method features full chemical synthesis of probes, strong FISH signals, and short processing periods, as well as multicolor capabilities.

***Visnjic D, Batinic D, Banfic H. Arachidonic-acid mediates interferon-gamma-induced sphingomyelin hydrolysis and monocytic marker expression in HL-60 cell-line. Blood 1997;89:81-91.**

**Zagreb University School of Medicine, Department of Physiology, 10000 Zagreb, Croatia*

In HL-60 cells activation of sphingomyelin (SM) cycle by IFN-g occurred rapidly, with a decrease of 20% in the SM level after 60 min, with a concomitant increase in ceramide level. IFN-g did not influence the 1,2-diacylglycerol concentration, intracellular Ca^{2+} concentration or phospholipase D activity, but stimulated a rapid release of arachidonic acid (AA) from HL-60 cells. This was abolished by the pretreatment of cells with pertussis toxin (PT). At 4 to 120 hours after the stimulation of cells with IFN-g, a significant increase in the particulate and soluble phospholipase A_2 (PLA₂) activity was observed, corresponding to an increase of immunoreactive cPLA₂ in cytosol and membrane fractions. The treatment of cells with herbimycin A abolished the effect of IFN-g on PLA₂ activity in membrane and cytosolic fractions, but had no effect on early AA release. PLA₂-activator melittin and AA mimicked the effect of IFN-g on SM hydrolysis. Pretreatment of cells with the PLA₂ inhibitor, bromophenacyl-bromide (BPB), or PT abolished the effect of IFN-g on SM hydrolysis; exogenous addition of AA overcame the effects of BPB and PT. Five-day exposure of HL-60 cells to IFN-g increased NBT-reducing and NSE-activity and expression of Fc-gRI (CD64). AA or melittin induced NBT, NSE and CD64 expression to the level similar of IFN-g, but with no further increase with the combination of IFN-g and AA or IFN-g and melittin. Data indicate a key role for the PLA₂/AA pathway elicited by the occupation of IFN-g-receptor in mediating the SM cycle and phenotypic changes associated with a differentiation of HL-60 along monocytic lineage.

Zuskin E, Mustajbegovic J, Schachter EN, Doko-Jelinic J. Respiratory function of textile workers employed in dyeing cotton and wool fibers. Am J Ind Med 1997;31:344-52.

Andrija Stampar School of Public Health, Zagreb University School of Medicine, 10000 Zagreb, Croatia

135 textile dyeing workers (97 male and 38 female) and 103 nonexposed controls were studied. The prevalence of all chronic respiratory symptoms was significantly higher in the exposed than in the control workers; in particular, the prevalence of occupational asthma was 6%. The exposed nonsmokers had more complaints than the nonsmokers. Nonsmokers had higher prevalences of dyspnea and rhinitis than control workers. Smokers exposed for 10 years or less had higher prevalences of chronic phlegm than nonsmokers with the same duration of exposure ($p < 0.05$). Smokers exposed for 10 years, had higher prevalences of chronic cough, chronic phlegm, and chronic bronchitis than nonsmokers ($p < 0.01$). Significant across-shift reductions of ventilatory capacity tests varied from an average of 4.0% for FVC to 14.2% for FEF₂₅. Preshift values of ventilatory capacity were significantly lower in this exposed population compared to predicted values, suggesting a chronic effect. Our data suggest that textile dyeing workers develop acute and chronic respiratory impairment as a result of their exposures. These findings are exacerbated by cigarette smoking.