the effect of VPA (0.4%) administered orally on hepatocellular tumor xenograft growth in vivo. We also studied the effect of Notch-1 gene expression on tumor samples. Methodology. Human hepatoma cell line HuH7 were cultured and allowed to grow to confluence (80-90%).Tumor xenografts: cells ($1x10^7$) were injected subcutaneously into the lateral flank of 14 6-8-week-old athymic male BALB/c mice. The animals were divided into two groups of 7 animals each. Two days before cell injection, the treated group received daily 0.4% VPA orally for 30 days. Tumor size was measured in millimeters every 3 days, and the tumor volumes were calculated. After 30 days, mice were sacrificed and tumors were again measured. HuH7 cells proliferation was measured using the MTT assay. Total RNA was extracted from tumor samples, and Notch-1 gene expression was assessed by qRT-PCR. Results. Our preliminary findings provide evidence that VPA treatment results in statistically significant ($p=0.0120$) reduction of tumor growth in treated group ($V=139$ mm^3) when compared with control group ($V=602$ mm^3). A dose-dependent inhibition of mitochondrial activity measured by the MTT assay, reflected the impaired survival of the VPA-treated cells. However, Notch-1 gene expression in xenografts was not modulated by VPA. Conclusion. In this animal model of hepatocellular carcinoma, VPA showed an antitumor effect which was probably not related to Notch-1 expression modulation. These findings suggest that VPA is of value for further exploration as potential anticancer agent targeting HCC.

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OVEREXPRESSION OF BRAIN GLUT-1 BUT NOT GLT-1 AND GFAP IN A NEW MODEL OF ACUTE LIVER FAILURE IN RATS

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Background: Acute liver failure is a complex clinical situation that frequently leads to death. Hyperammonemia, cerebral edema and encephalopathy are related complications. Acute liver failure also results in altered expression of several genes in brain, some of which code for important proteins involved in central nervous system protection. Glucose transportation system is very important for energetic protection of the brain on acute injury. Glutamine and glutamate are substracts for brain ammonia removal. Aim: To evaluate the effects of induced acute hyperammonemia in vivo on cerebral glucose (GLUT1) and glutamate (GLT-1) transporters, and the glial fibrillary acidic protein (GFAP) gene expression in rats submitted to a new model of acute liver failure. Methods: Fourteen male Wistar rats weighing 250 ± 5 g were used. Through a median laparotomy, the right lateral pedicles and caudate liver lobes were exposed and clamped. One hour later, the animal was reopened, clamps were released and anterior subtotal hepatectomy (resection of median and left lateral lobes) was performed, comprising 75% of liver removal. Four hours after hepatectomy, blood samples, brain and liver tissues were collected. In cerebral frontal cortex tissues, GLUT-1, GLT-1 and GFAP mRNA levels were measured using quantitative RT-PCR, and glutamine and glutamate content were measured by high-performance liquid chromatography. Serum ammonia levels and histological liver and cerebral assessment were also obtained. Results: At pre-coma stage of encephalopathy, animals with acute liver failure manifested a significant increase of GLUT-1 mRNA. However, GLT-1 and GFAP mRNA, glutamine and glutamate levels did not change. Conclusion: These findings are consistent with a compensatory overexpression of glucose transporter-1 (GLUT-1) in the set of induced acute liver failure and hyperammonemia in rats.

Part B (posters presented on 01th October 2010)

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SKIN TISSUE ENGENEERING USING FIBRIN MATRIX SCAFFOLD: IS IT REAL?

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Tissue engineering combines cells, engineering and suitable biomaterials matrix with biochemical and physio-chemical factors to improve or replace biological functions. Cells are often implanted or seeded into a structure capable of supporting three-dimensional tissue formation, called scaffolds. To achieve the goal of tissue reconstruction, scaffolds must meet specific requirements as: high porosity; biodegradability; coincidence of degradation rate occurs and rate of tissue formation. New biomaterials have been engineered to have ideal properties and functional customization: injectability, synthetic manufacture, biocompatibility, non-immunogenicity, transparency, nano-scale fibers, low concentration or resorption rates. As the ideal matrix hasn't been defined, the aim of this study was to analyze a fibrin gel scaffold spread with fibroblasts and keratinocytes as a tissue engineered model. Fibroblasts and keratinocytes were obtained from full thickness normal human skin and cultured in ideal conditions (37° C, atmosphere with 5% of CO^2) up to cell confluence from skin samples of five female healthy patients, aged between twenty-five and fifty years old. Cells were cultivated in specific culture media and seeded in a commercially available fibrinogen and thrombin combined to form a fibrin hydrogel according to manufacture's instructions (Tissuecol® R, Baxter, Austria). After completely polymerization, the colloid obtained presented transparent areas indicating the good quality of the hydrogel. Four different models were built: the first seeding only fibroblasts, the second seeding only keratinocytes, the third model using both cell types spread at same time and the fourth one using both cell types but with the spread of keratinocytes on the seventh day of culture. In each $2cm^2$ of hydrogel were seeded 150.000 keratinocytes and/or 100.000 fibroblasts. Matrix were kept in immersed culture during seven days and then analyzed. Both fibroblasts and keratinocytes demonstrated biocompatibility with fibrin hydrogel. Fibrin matrix populated only by keratinocytes presented signals of resorption when compared to matrix seeded with fibroblast or both cells. Thus, fibrin is a versatile biopolymer, which shows a great potential in tissue regeneration and wound healing. Keywords: fibrin glue, tissue engeneering, scaffold, fibroblasts, keratinocytes.

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WOUND HEALING MODEL: COMPARISON OFCONTRACTION INDUCED BY CULTUREDFIBROBLASTS FROM NORMAL SKIN AND FROM HYPERTROPHIC SCAR

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Introduction: Hypertrophic scars are a common problem in clinical daily practice but there is still a lack of knowledge about the mechanism of formation and alternatives on prevention and treatment. Bell *et. al* have