

(1) Student's name: Ondrej

I am sending you my abstract from congress on Morphology

Human embryonic stem cells CCTL14 line - comparison of low and high number passage

Ráček Ondřej(1), Sedláčková Miroslava(1), Dvořák Petr(2), Hampl Aleš(2)

(1) Department of Histology and Embryology, Faculty of Medicine, Masaryk University Brno, Czech Republic

(2) Department of Biology, Faculty of Medicine, Masaryk University Brno, Czech Republic

Introduction: Human embryonic stem cells (hESC) are well known for their ability to give rise to all types of tissues and are considered as pluripotent cells. They can be cultivated for a long time in an undifferentiated state, some cells exhibit morphologic signs of spontaneous differentiation. We are trying to describe various morphologic changes which can occur during the cultivation of a cell line with low and high number of passages. Our in vitro study concerns human embryonic stem cell line CCTL14 passage no.23 and no.234 by comparison. The aim of the study is the alignment of morphologic correlates of cultivation of hESC with **low number and high number** of passages which focus on ultramicroscopic changes.

Materials and Methods: The hESC CCTL14 lines (passage no.23 and no.234) were cultivated in medium with mice embryonic fibroblasts as a feeder layer and were conventionally processed for transmission [...], electron microscopy after 3 or 5 days of cultivation.

Results: Stem cell line CCTL14 (passage No.23 and passage No.234), were cultivated for 3 and 5 days. Cells are growing in multilayered colonies, which contain undifferentiated cells in their centres and cells usually transformed into epithelial phenotype on the **periphery**. This phenotype involves surface modifications such as microvilli and desmosomes. After the third day of cultivation, cells of both passages were characterized by a high nucleus/cytoplasm ratio, one or three prominent nucleoli, excessive cumulation of glycogen in the cytoplasm, many ribosomes, elongated mitochondria and numerous tiny Golgi apparatuses. In hESC with passage no.234, it was possible to find moreover rare profiles of rough endoplasmic reticulum compared with hESC passage no.23. After five days of cultivation a morphology of the cells of both passages was nearly the same, with the exception of an occurrence of lipid inclusions, secondary lysosomes and apoptotic bodies. These signs offered infallible evidence of a remodelling of the cells and a breakdown of some cells undergoing apoptosis. The number of apoptotic bodies and signs of apoptosis were frequent in CCTL14 passage no.234.

Conclusions: According to our observations it is clear that only part of the hESC maintained an undifferentiated state, as there were high occurrences of the passage acceleration of cell cycles. Additionally, swift differentiation was noticed.

The study was supported by Project No MSM 0021622430. [Overall: well written and clear to follow. Some mixed register with the use of informal/semi-formal expressions.]

(2) Student's name: Ludek

Money in the American colonies

This article deals with the monetary policy of the United States of America during the period of the money supply inadequacy. The paper is based on the monetary policy analysis especially on the **usage of the foreign specie coins, state money, loan money, bills and debts money through the 17th century**. [< It presents an analysis of the monetary policy of the 17th century, with specific reference to the US' usage of state money, loan money, bills...]The proceeding discusses the way the representative money came into circulation and what its impact was on the price level.

The dividend policy

The article researches factors that are crucial for the dividend policy. **The paper** deals with the impact of the dividend policy on the company's value. The **proceeding** explains the reason for the [existence/expansion/creation] of corporate investor wealth. It is concerned with the problem of whether financial management decisions contribute to the company surplus value. It points out the

relationship between the dividend payments and the capita yield. [It concludes that] The postponed dividend payment is considered to be a negative signal for investors.

[Overall, easy to read; some clauses appear misplaced; in other parts, repetition could be avoided]

(3) Student's name: Katerina

A Study of Scheelite Mineralisation: the Skarn Deposits in Žulová Batholith and Třebíč Batholith

Abstract: The two skarn localities with scheelite mineralisation, placed in different geological units, have been studied, including WDX-analysis and cathode luminescence. The Žulová Batholith is represented by accessory scheelite in two mineral associations: garnet skarn and greisenized chlorite-quartz layer with relicts of pyroxene. Primary scheelite contains higher Mo amount than washed scheelite. Some grains are zonal in the cathode luminescence. Nevertheless, scheelite associations in Třebíč Batholith are generally similar: pyroxenic skarn and garnet skarn. However, the conditions of the scheelite crystallisation in the skarn bodies were slightly different according to the different accessory minerals in every association. Primary scheelite of the Žulová Batholith is enriched by Mo rather than primary scheelite from the Třebíč Batholith. The majority of studied garnets were classified as grossular and most of the pyroxenes appertained to hedenbergite. In both the batholiths scheelite occurs in reduced tungsten skarns associated with the ilmenite-series of granitoids. Differences in the composition of the scheelite, garnets and pyroxenes were caused by various compositions in fluids protoliths and oxygen fugacity conditions.

Keywords: garnet, mineral chemistry, Moldanubicum, pyroxene, scheelite, Silesicum, tungsten skarn, Třebíč Batholith, Žulová Batholith

[Overall: fine; cohesive devices would help to create greater flow in the text]

(4) Student's name: Petr Summary (of a dissertation)

Hasala P. : The frequency of complications after laparoscopical cholecystectomy according to the coagulation technique – a comparative study

Introduction: The author is trying to analyze the impact of coagulation instrument devices used during gallbladder removal surgery. Standard electrocautery is compared to the use of harmonic scalpel.

Aim: To determine whether the different principles of these methods are the key to the frequency and severity of complications during laparoscopies. The aim of this study is to find the answer to this question.

Methods: Data collected from statistically significant number of patients were evaluated and the experiment on porcine liver tissue was done to illustrate the histopathological changes in tissues after use of electrocautery and harmonic scalpel.

Results and conclusion: The presented data and experiment on animal liver tissue shows that the use of harmonic scalpel during gallbladder removal is a safer technique with much lower risk of complications than the use of ordinary electrocautery. [good]

Keywords: laparoscopy, coagulation, harmonic scalpel, cholecystectomy

[Overall: clear; some typical expressions are given above as preferred alternatives to those given for each section]

(5) Student's name: Helena

Abstract of my conference contribution (this length is required):

The aim of this contribution is to outline the influence of different concepts of environmental protection in the usage of energy from renewable sources as well as specific developments of relevant legal regulations on decision making in cases where a conflict of public interests has taken place. These considerations were stimulated by statements of representatives from institutions promoting the use of energy from renewable sources. This is followed by an analysis of the changes to legislation involving invasive alien plants and expressions of public interest in the energetic act, in connection with Directive 2009/28/EC. The conclusions express the need for ongoing discussions.

[Overall: as it stands, this short excerpt is in fine in that it can be easily understood. However, it could be improved further by formulating succinct expressions that are more reflective of academic register].