

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ
ЦЕНТР**

**МАТЕРІАЛИ
X ВСЕУКРАЇНСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ
КОНФЕРЕНЦІЇ СТУДЕНТІВ, АСПІРАНТІВ ТА
ВИКЛАДАЧІВ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО
ЦЕНТРУ КАФЕДРИ ІНОЗЕМНИХ МОВ**

**“WITH FOREIGN LANGUAGES TO MUTUAL
UNDERSTANDING, BETTER TECHNOLOGIES AND
ECOLOGICALLY SAFER ENVIRONMENT”**

**(Суми, 24 березня 2016 року)
The tenth all Ukrainian scientific practical student`s,
postgraduate`s and teacher`s conference**

therefore more detailed development of this theory will allow to expand the carbon fiber composite usage in mechanical engineering.

The major task of researches is to improve already existing ways of a shaping of detachable joints from carbon fiber composites by means of reliability, durability and joint accuracy improvement and also to develop new ways of detachable joints of details from the carbon fiber composite and usage of new geometrical forms of these surfaces.

HISTOLOGICAL FEATURES OF RED BONE MARROW IN RATS

*Yu. Lyndina – Sumy State University, PhD student
S.G. Zolotova – E L Adviser*

Bone marrow is the flexible tissue in the interior of bones. In humans, red blood cells are produced by cores of bone marrow in the heads of long bones in a process known as hematopoiesis. The hematopoietic component of bone marrow produces approximately 500 billion blood cells per day, which use the bone marrow vasculature as a conduit to the body's systemic circulation. Bone marrow is also a key component of the lymphatic system, producing the lymphocytes that support the body's immune system. Information about the normal structure of the bone marrow is a key step in understanding its changes under the influence of negative environmental factors.

Objectives. To investigate the histological features of the red bone marrow in mature rats and compare them with the human red bone marrow.

Material and Methods. The study was conducted on the iliac bones of mature white laboratory rats. The material was fixed in 10% neutral formalin for 24 hours. The decalcification process took place in a solution of formic acid. After that paraffin blocks were made of it. Then sections with the thickness of 3-4 mm were made and they were subjected to the standard process of dehydration in xylol and

alcohols of rising concentration. They were stained with hematoxylin-eosin and by Romanovsky-Himze. Histological preparations of human bone marrow used to compare with rat bone marrow.

Results. Microscopic analysis of histological preparations of mature laboratory rats showed that the stromal as well as hemopoetic tissue was presented in red bone marrow. Stromal tissue is presented by bone, adipose tissue, reticular and collagen fibers, sine wave, macrophages, fibroblasts, osteoblasts and osteoclasts. Parenchyma (hematopoietic cells) is presented by shoots formation of granulocytes, monocytes, lymphocytes, erythrocytes and platelets.

Comparing quantitative and qualitative indicators of rats and humans red bone marrow, a significant percentage differences were not found, although rat's hematopoietic cells were characterized by some features. Most of eosinophils and neutrophils had annular core because granulocyte development in rats passed by ring type. Granularity of neutrophilic granulocytes are very small, their nuclei are more segmented (5-8 segments). Large size of basophilic granulocytes is founded as single cells. Lymphocytes and monocytes are erythroid.

Conclusions. Because of the lack of significant anatomical, morphological and histological differences of rats and humans red bone marrow, it can be argued that forming organs of hematopoiesis in rats occurs on the same principles as in humans, although it has certain patterns.