

# The Isolation and Comparative Study of Mice Bone Marrow Growth-Inhibiting Thermo-Stable Protein Complex

E.Tavdishvili, N. Maziashvili, E.Bakuradze, I.Modebadze, L.Rusishvili, N.Bedineishvili, D.Dzidziguri

Javakhsishvili Tbilisi State University, Faculty of Exact and Natural Sciences, Department of Biology, Chamber of Morphology

*e-mail:* [elene.tavdishvili@tsu.ge](mailto:elene.tavdishvili@tsu.ge)

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The processes which are the basis of the growth and development of the organisms, such as cell proliferation, differentiation, etc., both in pre- and postnatal periods of ontogenesis, are under control of growth factors. One of such inhibitor of endogenous growth was isolated and partially identified within the thermo-stable protein complex (TPC) in different tissues of adult white rats, including the brain. It has been shown that by inhibiting the transcription it stops the proliferation of the homologous cells; has tissue-specificity regarding to terminally differentiated cells, but does not express species-specificity. At the same time TPC does not affect the proliferational activity of bone marrow in adult, as well as the newborn animals.

**Study aim:** To isolate and study the thermo-stable proteins of the adult mice bone marrow.

**Objects of study:** The study was held on the white adult mice (20-25 g) and rats (140g); the used tissues include mice bone marrow and rat pancreas.

**Methods:** Alcohol extraction of proteins; electrophoresis in polyacrilamide gel; mouse bone marrow fixation; paraffin embedded histological sections; determination of mitosis index in light microscope („Hamilton”DN-200M).

**Results:** The comparative electrophoretic analysis of TPC from mice bone marrow and rat pancreas has been held. It was established, that as like as the pancreas complex, the protein complex of bone marrow contains two subunits with the molecular weight of 45-60 and 12-17 kDa. The low molecular mass fraction of bone marrow proteins was minor. We also showed, that TPC of bone marrow inhibited the proliferation activity of homotypical cells by 15%, that, as suggested, is due to the minor low molecular fraction.

**Summary:**

- The bone marrow of adult rats contains thermo-stable protein complex with minor representation of active low molecular fraction ( 12-17 kDa)
- The TPC of mice bone marrow has inhibitory effect on the proliferation of homotypical cells.