

Comparative Study on Cell Lines Established from Retrovirus-Induced Transplantable Chicken Liver Cancer

R. Alexandrova*, T. Zhivkova*, L. Dyakova**, I. Dankov*^{***},
P. Jordanova*, V. Altanerova****, C. Altaner****

*Institute of Experimental Morphology, Pathology and Anthropology with Museum,
Bulgarian Academy of Sciences, Acad. Georgi Bonchev Str., Block 25, Sofia, Bulgaria;

**Institute of Neurobiology, Bulgarian Academy of Sciences;

***Faculty of Medicine, Sofia University St. Kl. Ohridski

****Cancer Research Institute, Slovak Academy of Sciences, Bratislava, Slovakia

The cell lines LSCC-PR2-Mc29 and LSCC-SF-Mc29 were established from a transplantable liver cancer in chicken induced by the myelocytomatosis virus Mc29. The aim of the present study was to evaluate comparatively some biological characteristics of these cells. Both cell lines have been found to grow as monolayer cultures and form 3D colonies in semi-solid medium, express *v-myc* (*gag-myc*) gene; are sensitive to the cytotoxic/cytostatic effects of the widely used commercial anticancer drug cisplatin. On the other hand, these cells differ in their tumorigenic potential *in vivo*.

Key words: myelocytomatosis virus Mc29, transplantable chicken liver cancer, cell line.

Introduction

Avian myelocytomatosis virus Mc29 was isolated in Bulgaria in 1961 from a Rhode Island Red chicken with spontaneous myelocytomatosis [3]. It belongs to the group of defective avian leukemia retroviruses (ALVs). It has been shown that all three genes essential for the replication of ALVs, i.e. *gag*, *pol* and *env*, are defective in Mc29 virus (gene *pol* is completely missing). The virus possesses a specific oncogene – *v-myc* [5, 8]. *In vitro* the virus Mc29 induces transformation of fibroblasts, epithelial cells and macrophages. *In vivo* transmission causes primarily myelocytomatosis and myelocytomas in chickens but it is also responsible for a broad spectrum of leukemias and tumor growths, including endothelioma, mesothelioma sarcoma and erythroblastosis. Of particular interests are some epithelial cell tumors in the kidney, pancreas and especially in the liver [4, 6, 8]. LSCC-PR2-Mc29 [9] and LSCC-SF-Mc29 [1] are cell lines derived from Mc29 virus-induced transplantable chicken liver cancer. The aim of the present study was to compare some biological characteristics of these cell lines.