ONCOSUPRESSOR PROPERTIES OF CANCER-TESTIS ANTIGENS, SEMG1 AND SEMG2, IN THE MODEL OF HUMAN PANCREATIC CARCINOMA MIA-PACA2

O. Y. Shuvalov[a, *], A. I. Kizenko[a], A. V. Petukhov[a, b], S. E. Parvenyev[a], O. A. Fedorova[a], A. A. Daks[a], and N. A. Barlev[a]

[a] *Institute of Cytology RAS, St. Petersburg, 194064 Russia*

[b] *Almazov National Medical Research Centre, St. Petersburg, 197341 Russia*

**e-mail: oleg8988@mail.ru*

Cancer-testicular antigens – semenogelins 1 and 2 (SEMG1 and SEMG2, respectively) are the main proteins of human seminal fluid and are also expressed in malignant neoplasms of various genesis. Despite the fact that the biological role of semenogelins in the reproductive process is well understood, almost nothing is known about their functions in tumor cells. In the present study, we used a cell model of human pancreatic cancer – the Mia-Paca2 cell line with overexpression of SEMG1 or SEMG2, as well as control cells (Mia-Paca2 transduced with the corresponding vector). Using flow cytometry and a fluorescent agent – dihydroethidium (DHE), which predominantly detects superoxide anion. We showed that overexpression of SEMG1 and SEMG2 increases the level of ROS. In addition, both semenogelins increased the susceptibility of tumor cells to the widely used chemotherapeutic genotoxic drugs doxorubicin and cisplatin. The data obtained indicate the oncosuppressive properties of SEMG1 and SEMG2 in Mia-Paca2 cell model of pancreatic cancer.

Keywords: semenogelins 1 and 2, cancer-testis antigens, pancreatic carcinoma, reactive oxygen species, genotoxic drugs, doxorubicin, cisplatin