A NEW IMMUNOMODULATING PREPARATION GA-40 WITH NTICARCINOGENIC PROPERTIES

G. Alexidze,¹ N. Aleksidze,² D. Pirtzkaishvili,³ R.Gagua

Tbilisi State University Departments of Plant Physiology,¹ Biochemistry and Biotechnology² National Cancer Center of the Republic of Georgia³

380009,University str.2,Tbilisi,Republic of Georgia
Fax: (995-32)-92-05-53, Tel: (995-32)-98-71-96, e-mail: alexisgiorgi@hotmail.com

The search of nontoxic natural origin substances that could induce selective damage of malignant cells directly or by means of antitumor immunity activation are the two major strategies in cancer therapy. We concentrated mainly on the search for new polypeptides derived from plants and development of their preclinical and clinical tests. The aim of our investigation was identifying, characterization, establishing and documenting of the efficacy and safety of these substances. As a result of such works the new immunomodulating and anticarcinogenic preparation GA-40 was created. GA-40 is a natural, obtained from ecologically pure plant material widely used for medical treatment since old times in Georgia. GA-40 is a polypeptide complex, containing chromatographically purified, standardized combination of polypeptides. Preclinical and clinical tests have shown that GA-40 has a direct cytotoxic effect on certain type malignant tumour cells and unlike chemical preparations has no negative effect in the normal cells (fibroblast, endothelial cells). As an immunomodulator, GA-40 makes correction of the organism immune status and restores the quantitative and functional indicators - immune T and B cellular systems, i.e. T-helper cells, T-cytotoxic cells, T-killers (NK-cells), macrophages and granulocytes. GA-40 stimulates the production of cytokines, including the TNF-α and INF. GA-40 provides for normalization of the blood biochemical indicators - total protein, albumin, globulin, urea nitrogen, creatinine, bilirubin, glucose concentration, as well as certain enzymes activity such as alanine-aminotransferase (ALT), aspartat-aminotransferase (AST), g-glutamil-transpeptidase (g-GP) and alkaline phosphatase. The preparation renders a positive influence on the dynamic of carcinoembryonic antigens (CEA), alphaetoprotein(AFP), prostate-specific antigen (PSA). GA-40, similar to certain cytokines such as the tumor necrosis factor(TNF-α) and interferon (INF) determine the wide spectrum of biological activities. GA-40 treatment inhibits growth of tumor cells and in some cases causes full regression of the existing tumor and metastases. GA-40 treatment reduces the rate of tumor recurrence and metastases, improves the overall survival, as well as the quality of life and exerts immunoprotection in cancer patients treated by destructive therapy.