DESCRIPTION FOR THE GENERAL PUBLIC

Neoplastic diseases constitute an increasing threat to human life. Due to the prolonged life span associated with the development of medicine, as well as growing industrialization and urbanization leading to unsustainable development and increased environmental pollution, the incidence of cancer diseases will continue to grow in the coming years. Despite the efforts and financial resources invested in the research for anticancer drugs, the World Health Organization states that only in 2015, 9 million people died as a result of cancer.

Current therapies do not always show sufficient anticancer effectiveness. It is caused by the emergence of resistance of tumor cells to the currently used drugs, as well as difficulties in reaching the target of the action, due to the specific conditions prevailing in the environment of cancerous tumors.

Taking into account all these factors, we prepared a project in which the synthesis and anticancer study of various curcuminoid-polyphenol connections are proposed. Both groups of compounds have revealed a documented anticancer action. Therefore, we stipulate that their use together in the permanent connection may further enhance the final medical effect. Also, in order to increase the activity of such connections, their incorporation to appropriately selected drug carriers was proposed – this approach in the past resulted in increased drug activity. In order to assess the effectiveness of the new conjugates and to compare their effectiveness, we plan to examine them on various cancer cell lines. Moreover, in order to find out more about the persistent antitumor activity in the living body, the most active connections embedded in lipid carriers will be tested on mice with induced neoplastic diseases.