

Introduction of anticancer monoclonal antibodies recognizing tumor-associated antigens was a breakthrough in oncology. Many of such antibodies boost immune system and delegate immune response directly into cancer cells. Immune system attacks tumor among others via the complement system, a cascade based on consecutive rearrangement of serum proteins eventually leading to pore formation in the membrane of target cell. Flux of water, ions and energetic substances causes death of attacked cell. Resistance to anticancer antibodies is an emerging problem in cancer therapy. It stems from elevated expression of complement inhibitors on cancer cells. These proteins deactivate complement components deposited on cancer cells by cleaving their fragments crucial for further cascade processing. Another problem is shedding of target antigens for anticancer antibodies by tumor cells. This phenomenon occurs in a manner dependent on concentration of therapeutic antibodies and several reports showed that far better results are achieved when combination of antibodies recognizing different molecular targets is applied. The aim of the project is to check whether it is possible to raise antibody specific for element of complement cascade already inactivated by complement inhibitors. If successful, it can be used as a universal secondary antibody to be used in combination with every first-line immunotherapeutic capable of complement activation on tumor cells.