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Title: **Role of the complement system in cancer progression and therapy.**

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The complement system as a part of innate immune system is aimed to recognition and elimination of invading pathogens. Several activation pathways and various pattern-recognition molecules as well as multiple effector mechanisms including opsonisation, anaphylaxis and direct cell lysis ensure wide spectrum of direct and indirect cytotoxic activities. This system may be efficient enough to remove all the complement-activating cells, unless complement inhibitors naturally protecting own cells and tissues from misguided complement attack interfere with the process. Noteworthy, complement can be also targeted onto tumor cells since transformation from normal to malignant phenotype is reflected in composition of cell membrane due to accompanying metabolic changes or appearance of mutated proteins. However, tumor cells evade complement attack by overexpression of membrane-bound complement inhibitors and natural antitumor antibodies are often present at low titers or possess low affinity. On the other hand, therapeutic modulation of complement activity emerges as an attractive target in clinical approaches and there are several anti-cancer drugs approved, which utilize the complement system as their effector mechanism.

During the lecture, the following issues will be discussed:

- historical view of the complement system
- changes in perceiving the complement system within last decades
- evidence for importance of the complement system in tumor progression
- a dilemma, whether complement is a friend or foe of tumor cells
- role of the complement system in antibody-based immunotherapy of malignant lymphomas
- concept on how to turn factors fueling autoimmune events into supporters of immunotherapy