Fakultät für Medizin

Dokumenttyp: journal article

Autor(en) des Beitrags:
Bourquin, C; Schmidt, L; Lanz, AL; Storch, B; Wurzenberger, C; Anz, D; Sandholzer, N; Mocikat, R; Berger, M; Poeck, H; Hartmann, G; Hornung, V; Endres, S

Titel des Beitrags:
Immunostimulatory RNA oligonucleotides induce an effective antitumoral NK cell response through the TLR7.

Abstract:
RNA oligonucleotides containing immune-activating sequences promote the development of cytotoxic T cell and B cell responses to Ag. In this study, we show for the first time that immunostimulatory RNA oligonucleotides induce a NK cell response that prevents growth of NK-sensitive tumors. Treatment of mice with immunostimulatory RNA oligonucleotides activates NK cells in a sequence-dependent manner, leading to enhanced IFN-gamma production and increased cytotoxicity. Use of gene-deficient mice showed that NK activation is entirely TLR7-dependent. We further demonstrate that NK activation is indirectly induced through IL-12 and type I IFN production by dendritic cells. Reconstitution of TLR7-deficient mice with wild-type dendritic cells restores NK activation upon treatment with immunostimulatory RNA oligonucleotides. Thus, by activating both NK cells and CTLs, RNA oligonucleotides stimulate two major cellular effectors of antitumor immunity. This dual activation may enhance the efficacy of immunotherapeutic strategies against cancer by preventing the development of tumor immune escape variants.

Zeitschriftentitel / Abkürzung:
J Immunol

Jahr: