トランスフェリン－マイトマイシンC高分子ハイブリッドの受容体介在性腫瘍細胞ターゲティング

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Receptor-Mediated Targeting of Mitomycin C to the Tumor Cells by Macromolecular Hybridization with Transferrin

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Transferrin (TF) is a glycoprotein, which transports ferric ion in the body. The receptor concentration of TF on the tumor cells is much higher than that on the normal cells. Therefore, TF is thought to be one of the most promising drug carrier to the tumor cells. In this study, transferrin-mitomycin C hybrid (TF-G-MMC) was synthesized. The molecular weight of TF-G-MMC was analyzed by SDS-PAGE; the aggregation of the TF molecules was not observed. TF-G-MMC was specifically bound to the TF receptor on Sarcoma180 and HL60 cells. The pulse-chase experiment showed that TF-G-MMC was internalized into the HL60 cells via the TF receptor and a part of the internalized TF-G-MMC was decomposed into TCA soluble fractions. Furthermore, the growth of HL60 cells in vitro was markedly inhibited by the treatment with TF-G-MMC. These findings suggest that TF is the useful drug carrier in targeting MMC to the tumor cells.

トランスフェリン（TF）とマイトマイシンC（MMC）の高分子ハイブリッド（TF-G-MMC）を合成した。SDS-PAGEによると，TF-G-MMCにはTF分子同士の結合を認めなかった。TF-G-MMCは腫瘍細胞表面上のTFレセプターと特異的に結合し，内在化を受けることが明らかになった。さらに，TF-G-MMCはHL60細胞の増殖を抑制した。