

عنوان مقاله:

In vitro combination therapy of pathologic angiogenesis using anti-vascular endothelial growth factor and anti-neuropilin-1 nanobodies

محل انتشار:

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خلاصه مقاله:

Objective(s): Emergence of resistant tumor cells to the current therapeutics is the main hindrance in cancer treatment. Combination therapy, which mixes two or more drugs, is a way to overcome resistant problems of cancer cells to current treatments. Nanobodies are promising tools in cancer therapy due to their high affinity as well as high penetration to tumor sites. Materials and Methods: Here, the inhibitory effect of mixtures of two nanobodies (anti-vascular endothelial growth factor (VEGF) and anti-neuropilin-1 (NRP-1) nanobodies) on tube formation of human endothelial cells in vitro and ex vivo were analyzed. Results: Results showed that combination of two drugs significantly inhibited proliferation and tube formation of human endothelial cells. In addition, mixtures of two nanobodies inhibited angiogenesis in chick chorioallantoic membrane (CAM) assay efficiently compared with each individual nanobody. Conclusion: Results highlight the efficacy of combination therapy of cancer compared with mono-therapy and promises development of novel anti-cancer therapeutics based on nanobodies targeting two or more targets of tumor cells.

کلمات کلیدی:

Cancer Dual targeting Nanobody NRP, 1 Single domain antibody VEGF

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