

Inhibitory effect of metoprolol on vascular endothelial growth factor production in human leukemic Molt-4 T- cells

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Background: Metoprolol (a selective β_1 -blocker) has been largely used in treatment of cardiac diseases. Moreover anti-tumor and anti-inflammatory effects of metoprolol have been determined. Vascular endothelial growth factor (VEGF), as a cytokine, plays an essential role in inflammation, tumor expansion and metastasis. **Aim:** In this study, the effect of metoprolol on VEGF production in leukemic Molt-4 T- cells has been assessed in vitro.

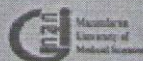
Methods: Human leukemic Molt-4 T- cells were cultured in complete RPMI-1640 medium supplemented with 10 % FBS. Then the cells at exponential growth phase were stimulated with PMA at optimum dose and incubated with different concentrations of metoprolol (1-1000 $\mu\text{g/ml}$) for 24 hours. Subsequently the amounts of VEGF in cell culture supernatant were detected by ELISA assay.

Results: Metoprolol significantly decreased the PMA- stimulated VEGF production in Molt-4 cells dose-dependently in comparison with untreated control cells. **Implications for practice:** Our results suggest that metoprolol could be a potential VEGF inhibitor. So anti-inflammatory and anti-tumor effects of metoprolol, reported by others, may be somewhat due to its inhibitory effects on VEGF secretion. Hence metoprolol might be useful as an innovative therapeutic candidate for some cancers in which VEGF is over-expressed .

key words: Metoprolol, leukemia, VEGF



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بدینوسیله گواهی می‌شود:

سرکار خانم فاطمه حاجی قاسمی

از تاریخ ۱۳۹۸/۸/۳۰ لغایت ۱۳۹۸/۹/۱ در هشتمین همایش ملی راهکارهای ارتقاء سلامت و چالش‌ها با محوریت سرطان که توسط معاونت تحقیقات و فن‌آوری دانشگاه علوم پزشکی و خدمات بهداشتی درمانی مازندران برگزار گردید، مقاله خود را تحت عنوان «Inhibitory effect of metoprolol on vascular endothelial growth factor production in human leukemic molt-4t T-cells» بصورت پوستر ارائه نموده‌اند.

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