

## The Effect of dcEFs on migration behavior of A549 cells and Integrin beta1 expression

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### 摘要

**Background and objective** The effect of direct-current electric fields (dcEFs) on cells attracted extensive attention. Moreover the metastasis and its potential are considered to be related to dcEFs. The aim is to study the effect of dcEFs on migration behavior of A549 cells, Integrin  $\beta 1$  and its signal pathways. **Methods** According to exposure to 5 V/cm dcEFs or not and the time of exposure, the A549 cells were divided into 4 groups. Images were taken per 5 min within 2 h to recode the migration of the cells. The data of results were analyzed statistically. **Results** Most of A549 cells exposed to the dcEFs aligned and elongated perpendicularly to the electric field lines and migrated to the cathode continually during 2 h. On the contrary, cells unexposed to dcEFs showed slightly random movements. **Immunofluorescence** showed that Integrin  $\beta 1$  on plasma membrane polarized to the cathode of the dcEFs. **Western blot** showed that Integrin beta1 downstream signal pathways p-FAK and p-ERK were overexpressed in the dcEFs. **Conclusion** A549 cells have a galvanotactic feature of cathodal directed migration while exposed to the dcEFs. The polarization of Integrin beta1 and the promotion of its downstream signal pathways may play an important roles in the galvanotaxis of A549 cells.






### 关键词

Lung neoplasms; Direct-current electric fields; Cell migration; Galvanotaxis



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