

# 前列腺癌和非小细胞肺癌发生脑转移差异的机制初步研究

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**Title:** Preliminary study on the mechanism of difference of brain metastasis in prostate cancer and non-small cell lung cancer

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**关键词:** 非小细胞肺癌; 前列腺癌; 脑转移

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**摘要:** 目的:初步探讨非小细胞肺癌和前列腺癌细胞均易于骨转移但非小细胞肺癌易于脑转移而前列腺癌细胞不易脑转移的机制。方法:选取非小细胞肺癌和前列腺癌的代表细胞株LNCap细胞株和A549细胞株培育至一定数量,分别采用Western-blot和qPCR检测法检测两种细胞株中趋化因子CXCR4、基质金属蛋白酶MMP-2前体(pro-MMP-2)、N-钙黏蛋白(N-cadherin)、VEGF-C、上皮特异性黏附分子(EpCAM)、PRKCA的含量差异,推测其不同靶器官转移机制的差异。结果:Western-blot得出与A549细胞相比,LNCAP细胞中CXCR4,EpCAM,MMP2,VEGF-C,N-cadherin蛋白表达显著降低;PRKCA蛋白表达显著增高。qPCR得出,与A549细胞相比,LNCap细胞N-cadherin mRNA表达降低;CXCR4 mRNA表达无明显差异;EpCAM,PRKCA mRNA表达增高;MMP2,VEGF-C mRNA未检出。结论:非小细胞肺癌和前列腺癌均易于骨转移,但非小细胞肺癌易于脑转移而前列腺癌不易脑转移,可能与非小细胞肺癌细胞富含N-cadherin而前列腺癌细胞富含蛋白激酶Cα(PRKCA)有关。

**Abstract:** Objective:To investigate the mechanism of non-small cell lung cancer and prostate cancer cells that are easy to metastases,but the non-small cell lung cancer is prone to brain metastases and the mechanism of the prostate cancer cells is not easy to transfer to the brain.Methods:The number of LNCap cell lines and A549 cell lines,the representative cell lines of non-small cell lung cancer and prostate cancer,were cultured to a certain number.The chemokine CXCR4,matrix metalloproteinase 2 precursor (pro-MMP-2) and N-cadherin and VEGF-C,epithelial specific adhesion molecules (EpCAM) and PRKCA were detected by Western-blot and qPCR assay respectively,and the differences in the mechanism of different target organs were speculated.Results:Western-blot showed that the expression of CXCR4,EPCAM,MMP2,VEGF-C,N-cadherin protein in LNCAP cells was significantly lower than that of A549 cells,and the expression of PRKCA protein was significantly higher.qPCR showed that compared with A549 cells,the expression of LNCap cells decreased in mRNA,and there was no significant difference in CXCR4 mRNA expression.EpCAM,PRKCA mRNA expressions were increased.MMP2,VEGF-C mRNA was not detected.Conclusion:Non-small cell lung cancer and prostate cancer are easy to metastases,but non-small cell lung cancer is prone to brain metastases and prostate cancer is not easy to brain metastases.It may be related to the abundance of N-cadherin in non-small cell lung cancer cells while abundance of protein kinase C alpha (PRKCA) in prostate cancer cells.

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