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JCB：新研究洞察癌细胞如何在身体内移动

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洞察细胞如何在身体内移动，可能导致创新技术来阻止癌细胞的扩散、抑制继发性肿瘤。近日，科学家发现，细胞可以转变成一种侵入性、液体状的状态，以随时在身体的狭窄通道（血管样通道）内移动。这种转化是由溶血磷脂酸（LPA）化学信号触发的，阻断该信号可以阻止癌细胞扩散。

大多数癌症死亡不是由于原发肿瘤，而是由于癌细胞转移到重要器官，如肺或脑部。发表在Journal of Cell Biology杂志上的新研究中，研究人员用胚胎干细胞来研究细胞群体在发育过程中如何用类似于癌细胞向周围扩散的方式来移动。

研究发现溶血磷脂酸（LPA）分子将细胞从固体状样细胞状态变化为液体状状态，使细胞在体内正常组织之间能移动。科学家们关闭LPA信号，能停止细胞在血管样通道内移动。

目前，研究已经找到了一种方法通过阻断LPA信号，停止胚胎细胞的运动，而这一类似机制或许能在癌细胞侵袭过程中发挥抑制作用。（生物谷Bioon.com）

详细英文报导：

Blocking cells' movement to stop the spread of cancer

Insights into how cells move through the body could lead to innovative techniques to stop cancer cells from spreading and causing secondary tumours, according to new UCL research.

Scientists discovered that cells can change into an invasive, liquid-like state to readily navigate the narrow channels in our body. This transformation is triggered by chemical signals, which could be blocked in order to stop cancer cells from spreading.

Most cancer deaths are not due to primary tumours, but to secondary tumours in vital organs, such as the lungs or brain, caused by cells moving from the original tumour to other places in the body.

The study led by UCL researchers and published today in the Journal of Cell Biology, used embryonic cells to investigate how groups of cells move in a developmental process similar to that used by cancer to spread around the body.

The team report a molecule called lysophosphatidic acid (LPA) changes cells from a solid-like to a liquid-like state, allowing cells to flow between normal tissues in the body. Scientists were able to switch off the signals from LPA, stopping the cells from moving down narrow, blood vessel-like channels.

Lead scientist Professor Roberto Mayor (UCL Cell & Developmental Biology), said: "We have found a way to stop the movement of embryonic cells by blocking LPA signals. It is likely that a similar mechanism operates during cancer invasion, which suggests a promising alternative in which cancer treatments might work in the future, if therapies can be targeted to limit the tissue fluidity of tumours.

"Our findings are important for the fields of cell, developmental and cancer biology. Previously, we thought cells only moved around the body either individually or as groups of well-connected cells. What we have discovered is a hybrid state where cells loosen their links to neighbouring cells but still move en masse together, like a liquid. Moreover, we can stop this movement".

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