

Electric cell-substrate impedance sensing and cancer metastasis

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Abstrak

Blood vessels of tumors display many structural and functional abnormalities. Their unusual leakiness, potential for rapid growth and remodeling, and expression of distinctive surface molecules mediate the dissemination of tumor cells in the bloodstream and maintain the tumor microenvironment. Like normal blood vessels, they consist of endothelial cells, mural cells and their enveloping basement membrane. Common features, irrespective of their origin, size and growth pattern, are absent hierarchy, formation of large-caliber sinusoidal vessels, markedly heterogeneous density, increased permeability, decreased and abnormal pericyte-endothelial cell adhesion, irregular basement membrane structure, and the incorporation of bone-marrow-derived endothelial progenitor cells in the microvasculature. A number of specific tumor endothelial markers have been identified, as well as chromosomal abnormalities. These markers may be used to deliver drugs specifically and selectively to the tumor microvasculature.