CTC clusters, cancer stemness, and new treatment strategies

Synopsis

CTC clusters are less frequently detected but more metastatic than single CTCs in breast cancer progression. Using intravital imaging, our studies demonstrate that clustered tumor cells in migration and circulation can result from aggregation of individual tumor cells, in a CD44-dependent manner. The intercellular CD44-CD44 homophilic interactions drive multicellular aggregation, and recruit PAK2 for further activation of FAK signaling. Associated with a poor prognosis of breast cancer patients, CD44+ CTC clusters can serve as novel therapeutic targets of polyclonal metastasis.