

Characterisation and impact of circulating tumor cell diversity on therapy response and metastasis formation

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Shedding of cells from solid tumors can occur during growth, diagnostic manipulation (mammography, fine needle aspiration, punch biopsy) and surgery as the first step in the metastatic pathway. However, it requires additional steps for such cells to settle, grow and invade the host tissue in order to form overt metastasis. Most cells released from the primary tumor seem not to be capable to perform these additional steps.

We have shown, the cells released from solid tumors can recirculate in the body, they respond to therapy in a comparable way as the primary tumor, but in always all cases cells are left over after therapy which sooner or later can regrow and form metastases even after years. We now are investigating which properties allow the cells to survive therapy and which prerequisites are necessary to allow them to regrow. This will not only contribute to clarify the metastatic pathways but also help to find ways to target these cells as the origin of new metastases.