Orthotopic syngeneic metastasizing breast cancer model – 4T1-M3

Orthotopic metastasis tumor models

Implantation of tumor cells into the organ of origin allows organo-typical interaction between tumor cells and surrounding stroma affecting growth, differentiation, and drug sensitivity of tumor cells. The 4T1-M3 model was designed to especially investigate the spread to metastatic sites in other organs.

4T1-M3 (CPQ-407)

The murine breast cancer cell line 4T1 (ATCC CRL-2539) was established from a spontaneous tumor in BALB/c mice.

In order to get higher metastasis rates we improved the murine 4T1 model by re-sectioning and re-cultivating the metastasis of invaded lungs. After using this approach for three rounds, we checked for increased occurrence of metastasis of this newly generated cell line 4T1-M3. This cell line expresses luciferase for convenient in vivo monitoring.

Study example – Doxorubicin

Mice bearing orthotopically implanted 4T1 or 4T1-M3 tumors were treated with Doxorubicin.

Metastases were identified by ex vivo luciferase analysis and compared between the 4T1-M3 and the parental cell line.

Flow cytometry data as well as study examples with immune-checkpoint inhibitors using the subcutaneous 4T1 model can be found on our homepage.