Orthotopic syngeneic colon tumor model – Ct26wt

Orthotopic Tumor Models
Implantation of tumor cells into the organ of origin ("orthotopically") allows organotypical interaction between tumor cells and surrounding stroma. It has been shown that this interaction affects growth, differentiation, and drug sensitivity of tumor cells. Moreover, tumor cells can spread to metastatic sites in other organs, with specificities comparable to the human situation. However, it must be emphasized that in most orthotopically implanted in vivo models using typical immortalized cell lines metastasis occurs but is very heterogeneous and not detectable in all animals after implantation. ProQinase started working on more reliable in vivo models to address intentions aiming mainly at metastasis. Nevertheless, analysis of the primary tumors of orthotopically implanted cancer cells gives us a very prospective read out when testing a new compound.

Ct26wt Cells (CPQ-364)
The mouse colon tumor cell line Ct26wt (parental cell line ATCC CRL-2638) was established from a spontaneous tumor in BALB/c mice. Using this mouse strain in our studies we can provide a reliable syngeneic model with defined time schedule. In order to detect the orthotopically implanted cells, a luciferase expressing cell pool was generated via transduction of a luciferase-neomycin construct and subsequent neomycin selection.

**In Vivo Bioluminescence Measurement**
During surgery, tumor cells are implanted into the caecum, one part of the colon compartment. Thereafter tumor growth will be monitored via in vivo bioluminescence imaging (BLI). Using BLI, animals can be randomized into treatment groups according to apparent tumor sizes.

**Study example**
Mice bearing orthotopically implanted Ct26wt tumors were treated with Capecitabine.