Orthotopic syngeneic colon tumor model – CT26.wt

➢ Orthotopic Tumor Models
Implantation of tumor cells into the organ of origin allows organotypical interaction between tumor cells and surrounding stroma affecting 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 orthotopic tumor models metastasis is very heterogeneous. ProQinase developed several tumor models to address intentions aiming mainly at metastasis. Please refer to our homepage for more information. Nevertheless, analysis of the primary tumors of orthotopically implanted cancer cells gives a very prospective readout when testing a new compound.

➢ CT26.wt cells (CPQ-364)
CT26.wt cells (ATCC-No: CRL-2638) were isolated from a colon carcinoma of a BALB/c mouse. A syngeneic tumor model was developed with subcutaneously implanted CT26.wt cells in BALB/C mice. In order to detect the orthotopically implanted cells, a luciferase expressing cell pool was generated.

➢ Study outline
CT26.wt cells are orthotopically implanted into the caecum, a part of the colon compartment. Thereafter, tumor growth will be monitored via in vivo bioluminescence imaging (BLI) once weekly. Using BLI, animals will be randomized into treatment groups according to apparent tumor sizes. During the study, animal behavior is monitored daily and animal weights are measured three times weekly. At necropsy, all tumors will be isolated for determination of tumor weights and volumes.

➢ Study examples – Capecitabine and anti PD-L1
Mice bearing orthotopically implanted CT26.wt tumors were treated with Capecitabine (left panel) and with the immune checkpoint inhibitor anti PD-L1 (right panel), respectively.

Figure 1: In vivo tumor growth of CT26.wt monitored via BLI.

Figure 2: Measurement of bioluminescence at different days after implantation.

Figure 3: Haematoxylin and eosin stained paraffin section of colon mucosa and CT26.wt tumor tissue.

Figure 4 and Figure 5: Mice were treated with Capecitabine (left panel) and anti PD-L1 (right panel) respectively and tumor growth was monitored via BLI.

Flow cytometry data as well as study examples with immune-checkpoint inhibitors using the subcutaneous CT26.wt model can be found on our homepage.

ProQinase disclaims any warranty explicitly or implied that the use of this service is free from third party intellectual property claims unless this is explicitly stated.