

➤ 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.

Reaction Biology developed several tumor model to address intentions aiming mainly at metastasis. Please refer to our homepage for more information.

➤ Tumor cell line RENCA-Luc (CPQ-181)

Origin: kidney / mouse BALB/c
Description: renal adenocarcinoma
Modification: stable expression of firefly luciferase

➤ Study outline

- orthotopic implantation of Renca cells into kidney
- randomization into treatment groups according to bioluminescence signal
- tumor growth and occurrence of metastasis is monitored via bioluminescence imaging once weekly
- animal behavior is monitored daily
- animal weights are measured three times weekly
- at necropsy, all tumors will be isolated for determination of tumor weights and volumes.
- Accessory services: blood sampling, immune cell frequency determination in the tumor and lymphatic tissues by flow cytometry, paraffin embedding of tumor tissue, histological & pathological analysis, cytokine determination, provision of tumor tissue for target validation

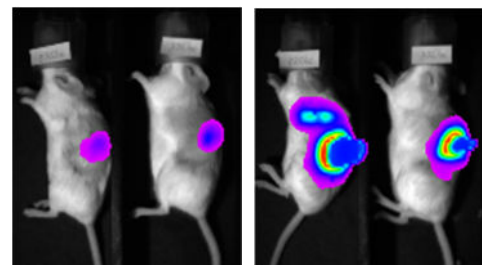


Figure 1: Mice with RENCA cells implanted into the kidneys were measured 2 days (left panel) or 3 weeks (right panel) after surgery.

➤ Study example – Sutent

Mice bearing orthotopically implanted Renca tumors were treated with Sutent. Treatment started after randomization according to in vivo luciferase signal.

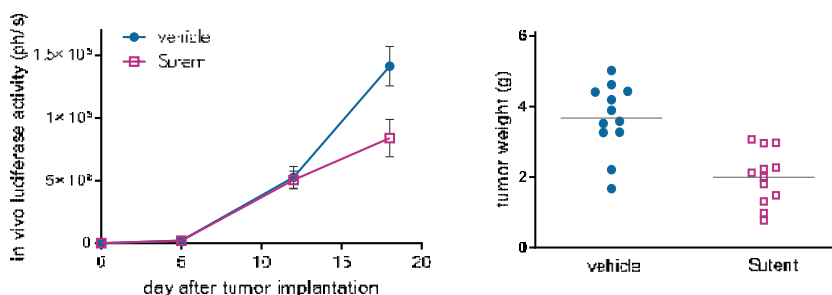


Figure 2: In vivo tumor growth was monitored using in vivo bioluminescence (left panel). Tumor weights were determined at necropsy (right panel).