Lung tumor model: LL-2
syngeneic – orthotopic

➢ 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 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.

➢ Tumor cell line LL-2 (CPQ-549)

Origin: lung / mouse C57BL/6
Description: lewis lung carcinoma
Modification: stable expression of firefly luciferase

➢ Study outline

LL-2-luc cells are injected into the lung of each mouse under anesthesia. 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.
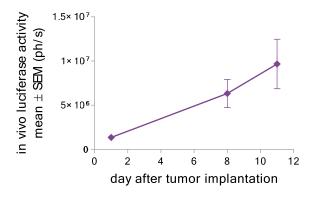

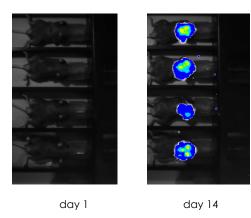**Figure 1:** *In vivo tumor growth of LL-2 monitored via BLI after orthotopic implantation.*

day 1   day 14

Figure 2: *Measurement of bioluminescence at different days after orthotopic LL-2 tumor cell implantation.*

➢ Quality assurance

• Routine authentication of tumor cell lines by STR profiling
• Mycoplasma testing of tumor cells by PCR just prior to implantation
• Routine health monitoring of sentinel animals (according to FELASA guide lines)
• Animal work according to the 5R rules (reduce, refine, replace, responsible, remember)

Note: Graphs depicted are derived from study examples. Each study is a biological system of its own and subject to intrinsic variation.