SK-OV-3 Luc: Orthotopic Ovary Tumor Model

IN VIVO PHARMACOLOGY

➢ 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. Reaction Biology 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.

➢ SK-OV-3 Luc cells

SK-OV-3 cells originate from the ascites of a woman with adenocarcinoma of the ovary.

In order to detect orthotopic growth of implanted cells, a luciferase expressing cell pool was initially generated via transduction of a luciferase-neomycin construct and subsequent neomycin selection.

➢ *In vivo* bioluminescence measurement

During surgery, tumors cells that were collected from ascites are orthotopically injected intrabursally into the right ovary.

Thereafter tumor growth is monitored via in vivo bioluminescence imaging (BLI).

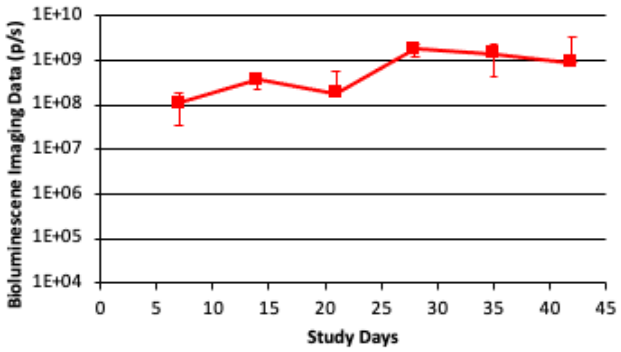

Figure 1: *In vivo BLI. In vivo tumor growth of SK-OV-3 was monitored once a week using BLI.*

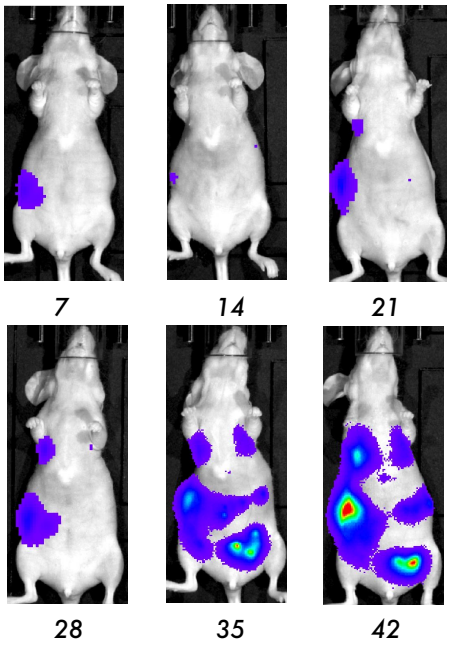

Figure 2: *Pictures of in vivo BLI. Mice with orthotopically growing SK-OV-3 tumors measured on day 7, 14, 21, 28, 35 and 42 after implantation*

➢ Study example

If you are interested in receiving information on potential positive controls please reach out to our Business Development team at requests@reactionbiology.com.