



# SKOV-3 xenograft model of human ovarian carcinomatosis

## A MODEL FOR PERITONEAL CARCINOMATOSIS

### Model

We established a xenograft preclinical model of human ovarian carcinomatosis based on the SKOV-3 cells (human ovarian serous adenocarcinoma cell line).

In collaboration with FlashTherapeutics\*, SKOV-3 cells were initially transduced with luciferase and a reporter fluorescent protein. This approach allows non-invasive *in vivo* monitoring of tumor growth by bioluminescence (BLI) and endpoint analysis of peritoneal dissemination by fluorescence (FLI).

We could also offer inducible genetic approaches to over-express or silence any target gene.

### Specie

Nude mouse

### Interest

- Xenogenic models combine the advantage of working with human cancer cells with the relevance of an *in vivo* host.
- SKOV-3 cells intraperitoneal injection simulates the process of peritoneal dissemination.
- BLI enables real-time, non-invasive monitoring of tumor growth and test item response over time.
- FLI allows endpoint analysis of Peritoneal Cancer Index (PCI): method used in hospitals to classify the degree of the carcinomatosis extension.
- This model is validated with the clinically relevant compound Doxorubicin.
- Treatment or gene activation/silencing can be initiated in a desired schedule (before or after tumor establishment).

### Model Description

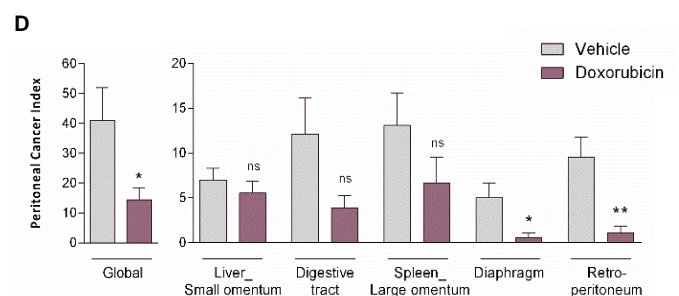
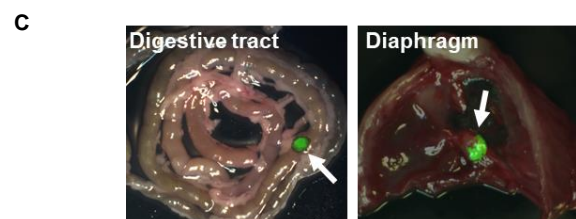
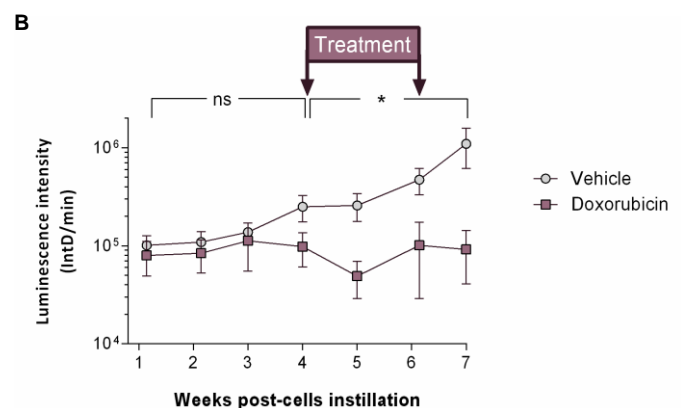
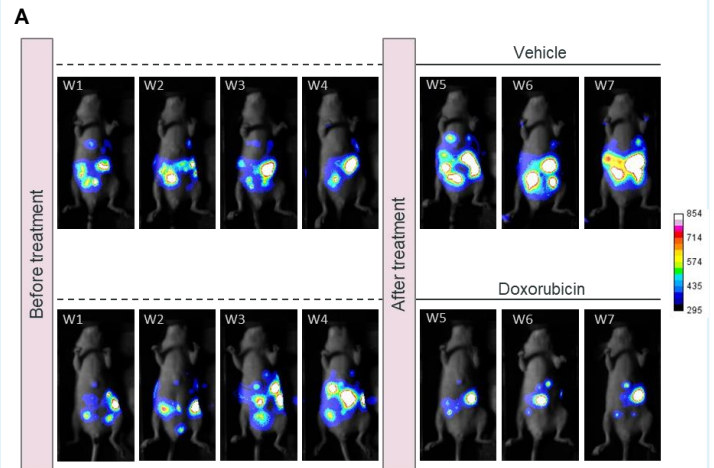
- Ovarian peritoneal carcinomatosis is established by intraperitoneal injection of SKOV-3.
- Mice are imaged by bioluminescence once or twice weekly.
- Endpoint fluorescence are performed at week 7.
- Test compounds can be administered *via* various routes (i.v., i.p., s.c., p.o.) in preventive or curative treatment.

### Parameters evaluated

- Carcinomatosis growth: BLI intensity over time
- Peritoneal dissemination: calculation of PCI
- Test item efficacy: tumor growth delay or inhibition
- Tumor can be resected under fluorescence for histological, molecular or biomarkers analysis

\* Flash Therapeutics (formerly Vectalys) is a new gene therapy company developing gene and cell-based therapies by leveraging its proprietary lentiviral platform and bioproduction technologies.

### Doxorubicin elicits antitumor effects in mice-bearing SKOV-3 ovarian peritoneal carcinomatosis



(A) Time-course BLI imaging of SKOV-3 ovarian carcinomatosis. Mice with established tumor were treated with doxorubicin at W4 (after imaging) and W6.

(B) BLI-based kinetic of SKOV-3 tumor growth expressed in IntDerv/min on a log scale. ns P>0.05, \* P<0.05 [n=9-10/group].

(C) Merge images [color images superimposed over FLI images] of nodules at W7.

(D) PCI at W7. \* P<0.05, \*\* P<0.01 [n=9-10/group].