**Supplemental Data**

**Figure S1.** Radiation sensitivity of mouse squamous cell carcinoma NR-S1 cells (NRN), X-ray resistant NR-S1 cells (NRX), human cervical carcinoma ME-180 cells (MEN), and X-ray resistant ME-180 cells (MEX). Cells were exposed to gamma radiation of 0, 4, and 8 Gy in vitro, as indicated by the linear exposure equipment. Data represent mean ± standard deviation (SD) (*n* = 5) of the survival fractions of each cell line. Survival fractions of A) NRX and NRN (control) and B) MEX and MEN (control) are shown. Statistically significant differences between cell lines were determined using the Student’s *t*-test and are indicated with an asterisk (\**P* < 0.01).

**Figure S2.** Adaptation of the “Local Interpretable Model-agnostic Explanations” (LIME) method to test phase-contrast microscopic images of human and mouse carcinoma cells. Representative results of the LIME method are shown. The LIME method helps visualize the basis of prediction (the area surrounded by the yellow border) by the convolutional neural network (CNN). Top, original images; bottom, results of the LIME method.