Supplementary Figures Legends

**Supplementary Figure 1. Radiation treatment setup for subcutaneous tumors in mice.** (A) Each mouse received a CT scan and individual treatment plan. Isodose distribution on the treatment plan shows a steep fall off of the radiation dose. The red, orange, yellow, olive, green, cyan, and purple lines correspond to the 100%, 95%, 80%, 60%, 40%, and 30% isodose lines, respectively. The inner orange line is the gross tumor volume and the cross is the isocenter of the tumor. The top left panel shows radiation beam angles. (B) X-rays taken immediately before radiation allow placement of the mouse for tumor targeted radiation. X-ray image from Exac Trac is superimposed on a digitally reconstructed radiograph (DRR) from the initial planning CT scan. The mouse spine is fused from two images from Exac Trac with DRR to determine the shifts necessary to bring the Exac Trac images into alignment with the DRR from the planning CT. The mouse is subsequently positioned according to the calculated shifts to ensure correct positioning. Pre-fusion image (top) shows the tail and spine are few millimeters apart, but are superimposed on the post-fusion image (bottom). (C) The external radiation beam comes out of a part of the accelerator called a gantry, which can be rotated around the mouse. Radiation can be delivered to the tumor from any angle. The original position of the mouse is aligned with lasers mounted on the walls and ceiling of the room. After the mouse alignment is done, a wet gauze bolus is put on the surface of the tumor to ensure adequate tumor surface dose.

**Supplementary Figure 2. Histological comparison of radiated and zoledronic acid treated tumors.** Hematoxylin and eosin stained tumors collected were compared between each treatment group. Pathologist findings are summarized in table at right. Radiated tumors generally had more fibrotic area, and less tumor cells present per area compared to unirradiated tumors. No obvious
changes were seen between tumors receiving radiation alone to those receiving radiation plus ZOL treatment. Some ZOL treated tumors showed focal areas with more lymphocytes. Photographs are representative of tumors collected at day 17. Number corresponds to the mouse tag. NR = not radiated; Rad = radiated; ZOL = Zoledronic acid treated.