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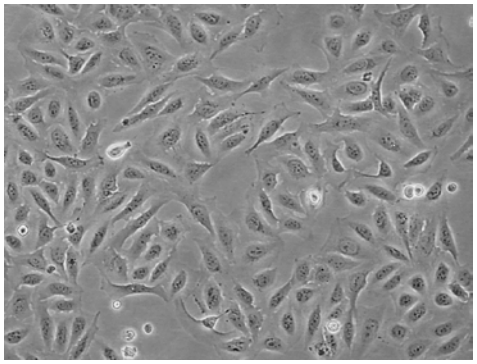
Technical Data Sheet: U-2 OS-Luc2

ATCC® Number	HTB-96-LUC2™
Organism	*Homo sapiens*
Tissue/Disease Source	Osteosarcoma
Product Description	This luciferase expressing cell line was derived from U-2 OS cell line by transduction with lentiviral vector encoding firefly luciferase gene (luc2) and subsequently through single cell cloning. • Signal noise ratio: ≥ 1,000 • Bioluminescence: ≥ 100,000 photons/cell/sec (subject to imaging and culture condition) • Confirmed to be murine pathogen free
Application	Excellent signal/background ratio and stable Luciferase expression make this cell line ideal for *in vivo* bioluminescence imaging of xenograft animal model to study human cancer and monitor activity of anti-cancer drug. It also can be used in cell-based assays for cancer research.

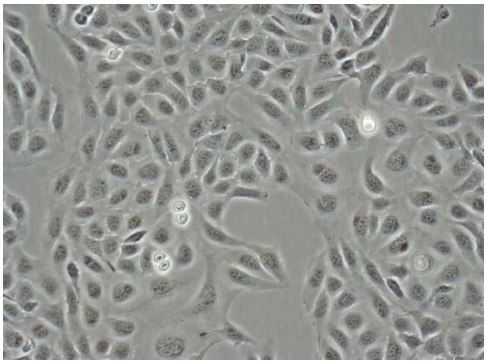
Cell Morphology

U-2 OS
(HTB-96™)



Doubling time = 20 hours

U-2 OS-Luc2
(HTB-96-LUC2™)



Doubling time = 19 hours

Figure 1: Cell morphology of U-2 OS parental and U-2 OS-Luc2. Cells were maintained in ATCC recommended culture conditions. Cell morphology was observed under microscopy and images were captured by digital camera.

Luciferase Expression

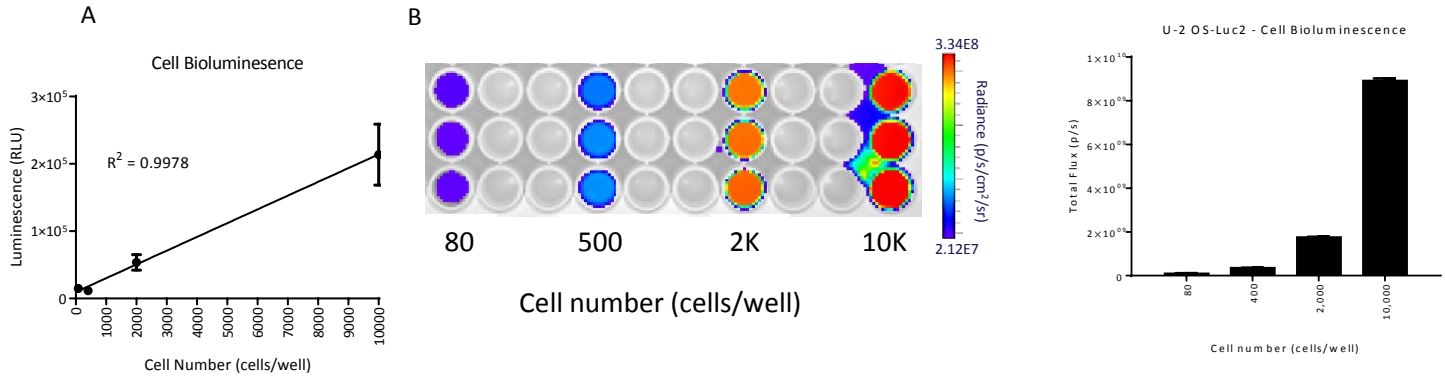


Figure 2: Linearity of luminescence and of *in vitro* quantification of luciferase activity of U-2 OS-Luc2. Cells were seeded in a 96-well plate at indicated cell numbers per well, and Bright-Glo (Promega) was added to the indicated wells. The luminescence of the plate was read within 10 minutes using a luminescence plate reader (A) and determined to have a linear correlation of bioluminescence intensity with cell numbers. (B) The plate was imaged using a Xenogen IVIS Spectrum to quantify the photons emitted per cell.

In vivo Bioluminescent Imaging

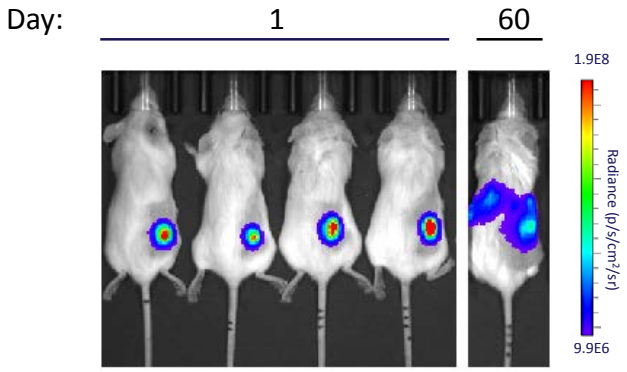


Figure 3: *In vivo* detection of luciferase activity of U-2 OS-Luc2. U-2 OS-Luc2 cells ($8x10^6$) were injected subcutaneously into the dorsal region near the thigh of female NSG mice. Tumor growth was monitored weekly using a Xenogen IVIS Spectrum. *In vivo* bioluminescence imaging demonstrated the progression of tumors. Note: 2/5 NSG mice developed tumors and 1/5 Nude mice developed tumors