

Technical Data Sheet: Raji-Luc2

ATCC® Number	CCL-86-LUC2™
Organism	<i>Homo sapiens</i>
Tissue/Disease Source	Burkitt's lymphoma
Product Description	<p>This luciferase expressing cell line was derived from Raji cell line by transduction with lentiviral vector encoding firefly luciferase gene (<i>luc2</i>) and subsequently through single cell cloning.</p> <ul style="list-style-type: none"> • Signal noise ratio: $\geq 1,000$ • Naturally expresses high levels of CD19 (verified at ATCC) • Raji-Luc2 has been used as a target cancer cell for <i>in vitro</i> killing assay by CD19 CAR-T cells (tested at ATCC) and is expected to also work for CD20 CAR-T cells.
Application	Excellent signal/background ratio and stable luciferase expression make this cell line ideal for <i>in vitro</i> study of CD19 specific CAR-T cells. It also can be used in cell-based assays for cancer research.

In vitro CAR-T killing cancer bioluminescence assay

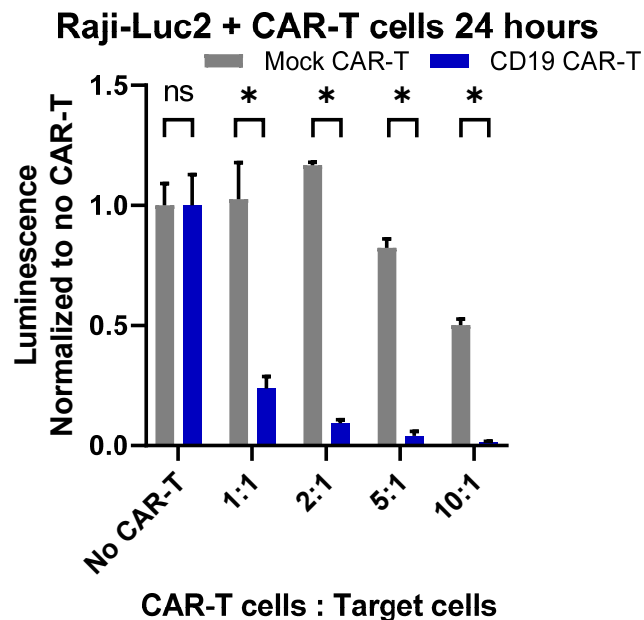


Figure 1: CD19 CAR-T *in vitro* killing assay of Raji-Luc2 measured using luminescence. Raji-Luc2 cells (5×10^3) were seeded into a 96-well plate and were used as target cells for either CD19 CAR-T or Mock CAR-T (control) from the same donor which were seeded at various ratios of CAR-T cells to target Raji-Luc2 cells (1:1, 2:1, 5:1, and 10:1). After 24 hours of co-culture, Bright-Glo (Promega) was added to the indicated wells. The luminescence of the plate was read within 10 minutes using a luminescence plate reader and determined to have a dose-dependent specific killing with CD19 CAR-T cells which was greater than the non-specific killing observed with mock CAR-T cells. (* = significant difference, ns = not significant using unpaired t test, with a single pooled variance).

Cell Morphology

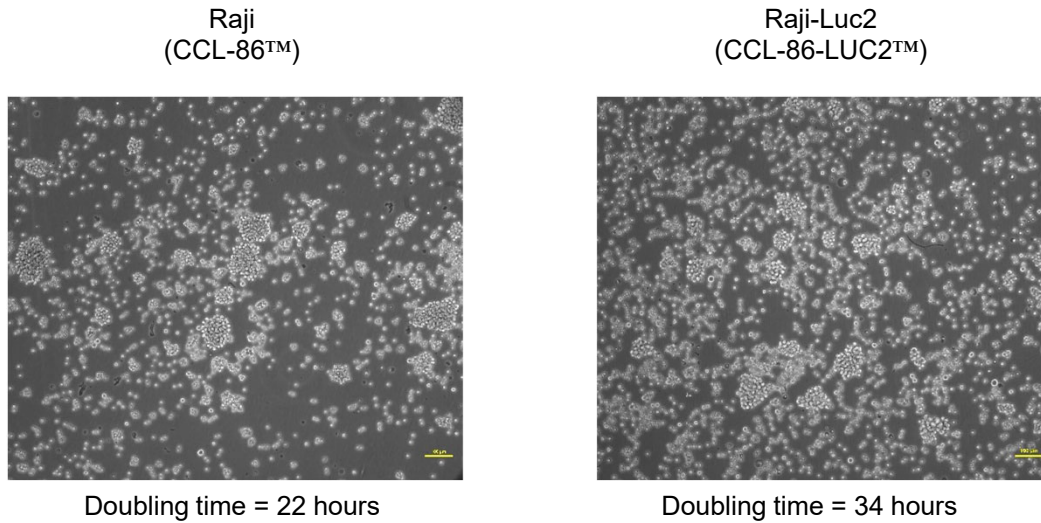


Figure 2: Cell morphology of Raji parental and Raji-Luc2. Cells were maintained in ATCC recommended culture conditions. Cell morphology was observed under microscopy and images were captured by digital camera.

Luciferase Expression

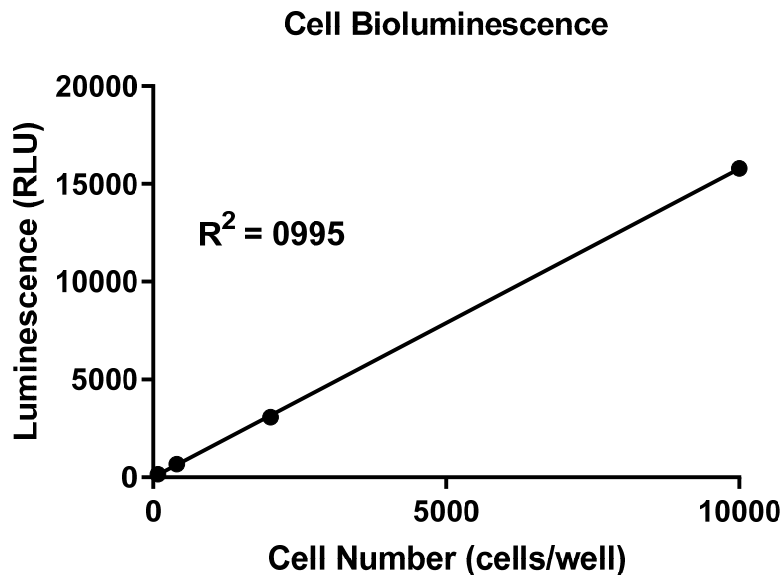


Figure 3: Linearity of luminescence of Raji-Luc2. Cells were seeded in a 96-well plate at indicated cell numbers per well, and Bright-Glo (Promega) was added to the indicated wells. The luminescence of the plate was read within 10 minutes using a luminescence plate reader and was determined to have a linear correlation of bioluminescence intensity with cell numbers.