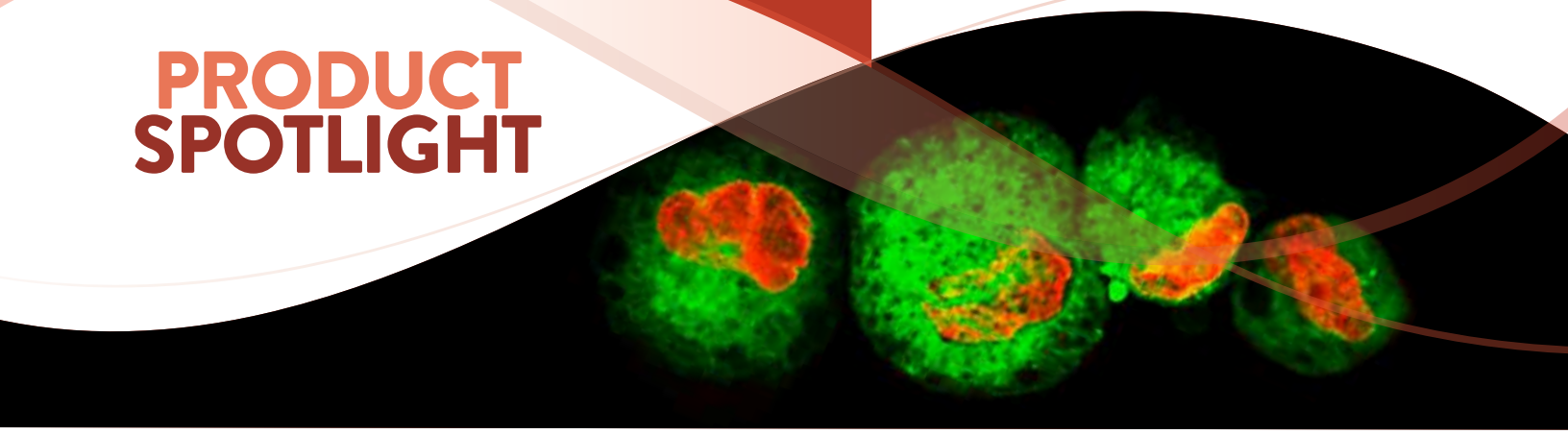
ATCC

PRODUCT SPOTLIGHT



CAR-T TARGET LUCIFERASE REPORTER CELL LINES

One of the bottlenecks in CAR-T therapeutic development is evaluating the biofunction of effector cells. This in vitro process involves a series of labor-intensive co-culture immunoassays. To address this challenge, we generated CAR-T Target Luciferase Reporter Cells lines that have high endogenous expression of clinically relevant cell surface tumor antigens, such as CD19, CD20, and HER2. These new immuno-oncology tools are comprised of both solid and liquid tumor cell lines that exhibit sensitive and stable luciferase reporter expression. These cells enable your immuno-therapeutic breakthroughs by allowing you to monitor the potency and efficacy of candidate CAR-T effector cells in your cytotoxicity and cell viability assays in real time.

Table 1: CAR-T Target Luciferase Reporter Cells

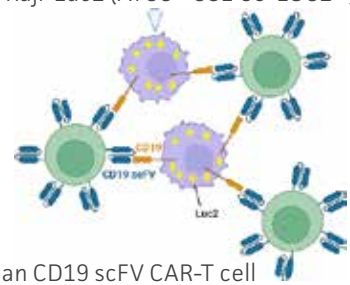
Designation	ATCC® No.	Disease	Target
WIL2-S-Luc2	CRL-8885-LUC2™	B Cell Lymphoma	CD19
Raji-Luc2	CCL-86-LUC2™	Burkitt's Lymphoma	CD19
Daudi-Luc2	CCL-213-LUC2™	Burkitt's Lymphoma	CD20
Farage-Luc2	CRL-2630-LUC2™	Non-Hodgkin's B Cell Lymphoma	CD20
BT-474-Luc2	HTB-20-LUC2™	Breast Ductal Carcinoma	HER2

These convenient reporter-labeled cells allow you to eliminate workflows involving radioactive or fluorescent dye labeling. The cells retain high expression of both the target antigen and luciferase up to 30 population doublings. These flexible target cells can also be incorporated in other immuno-oncology applications such as ADCC and natural killer (NK) cell cytotoxicity assays.

- High expression stability of both target antigen and luciferase
- High signal-to-noise ratio (S/N)
- Physiologically relevant low E:T ratios
- High-performing, fully authenticated cell lines
- Easy-to-use reporter system
- Real-time, live-cell imaging possible

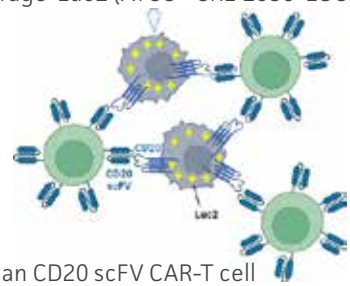
CHIMERIC ANTIGEN RECEPTOR

WIL2-S-Luc2 (ATCC® CRL-8885-LUC2™) or Raji-Luc2 (ATCC® CCL-86-LUC2™)



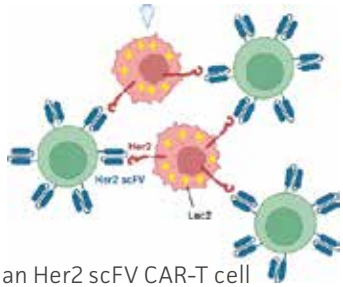
Human CD19 scFV CAR-T cell

Daudi-Luc2 (ATCC® CCL-213-LUC2™) or Farage-Luc2 (ATCC® CRL-2630-LUC2™)



Human CD20 scFV CAR-T cell

BT474-Luc2 (ATCC® HTB-20-LUC2™)



Human Her2 scFV CAR-T cell

Figure 1: CAR-T Target Luciferase Reporter Cells. Schematic showing CAR-T target cells with expression of CD19+ WIL2-S-Luc2 and Raji-Luc2, CD20+Daudi-Luc2 and Farage-Luc2, and HER2+BT-474-Luc2 being surrounded and attacked by CD19-, CD20-, and HER2-targeting CAR-T cells, respectively.

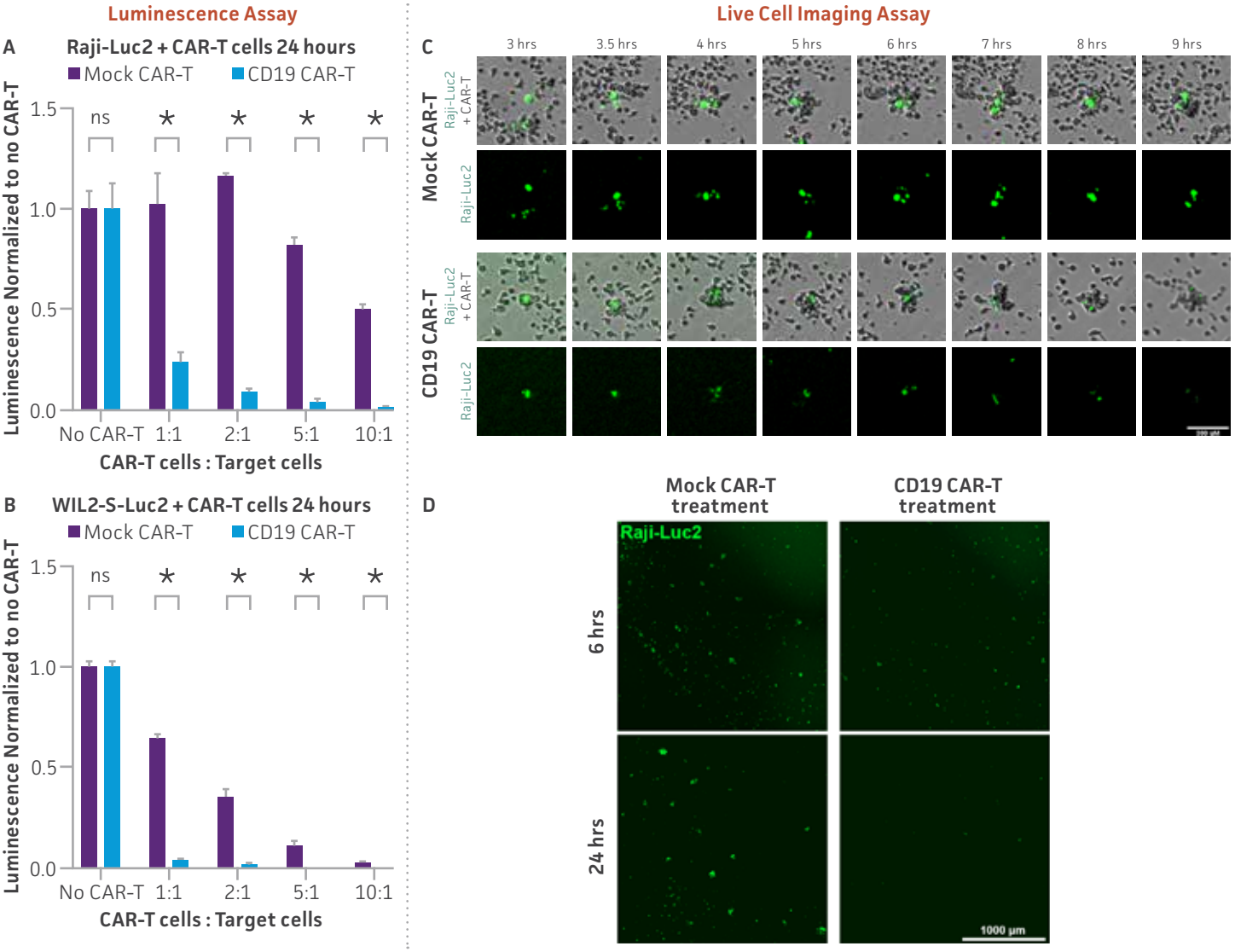


Figure 2: CAR-T Target Luciferase Reporter Cells can be incorporated into multiple CAR-T efficacy assays. (A) CD19 expressing Raji-Luc2 cells (B) or WIL2-S-Luc2 cells were used as target cells for either CD19 CAR-T or Mock CAR-T (control) effector cells from the same donor at the indicated effector to target cell ratios. A luciferase assay substrate was added, and the luminescence signal was detected. Loss of signal indicates cell death; the dose-dependent specific killing via CD19-targeting CAR-T cells was greater than the non-specific killing observed with the mock CAR-T cells. Additionally, Raji-Luc2 cells were stained with a cell labeling dye and then real-time fluorescent imaging was measured during co-culture with CD19 CAR-T effector cells. (C) Raji-Luc2 cells (Green) are surrounded by effector T cells, resulting in a decrease of fluorescence as compared to co-cultures with Mock-CAR-T cells. (D) After 6 and 24 hours of co-culture with CD19 CAR-T effector cells, we observed a decrease in the number of fluorescent cells; however, in a co-culture with Mock CAR-T cells numerous Raji-LUC2 cells were present. These results indicate that the ATCC CAR-T Target Luciferase Reporter Cells can be used to evaluate the potency of CAR-T cells in bioluminescence assays and live cell imaging in real time.

FOR MORE INFORMATION VISIT

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