### Technical Data Sheet: U-937-NFkB-Luc2

<table>
<thead>
<tr>
<th>ATCC® Number</th>
<th>CRL-1593.2-NFkB-LUC2™</th>
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<tbody>
<tr>
<td><strong>Organism</strong></td>
<td>Homo sapiens</td>
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<td><strong>Tissue/Disease Source</strong></td>
<td>Pleural effusion/ Histiocytic lymphoma</td>
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<td><strong>Product Description</strong></td>
<td>U-937 (ATCC® CRL-1593.2™) is a cell line exhibiting monocyte morphology that was derived in 1974 from malignant cells obtained from the pleural effusion of a 37-year-old, white, male patient with histiocytic lymphoma. U-937-NFkB-LUC2 luciferase reporter cell line was derived from parental line U-937 by stably expressing firefly luciferase gene (luc2) under control of the nuclear factor kappa B (NFkB) promoter. This cell line was established through lentiviral transduction and single cell cloning. The cells, upon stimulation, express high levels of enzymatically active luciferase protein, which can be detected via <em>in vitro</em> bioluminescence assays. This reporter cell line is useful for monitoring the activity of tumor necrosis factor alpha (TNF-α)-induced signal transduction pathways.</td>
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<td><strong>Application</strong></td>
<td>Enabling sensitive and quantitative assessment of signal transduction makes this reporter cell line ideal for <em>in vitro</em> bioluminescence assays to study immune response in cell lines with high expression of SIRPa, development of new drugs, and safety evaluation of new chemicals and drugs.</td>
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### In vitro expression of luciferase by TNF-α and T cell-conditioned media

**A** Luminescence signal from U-937 NFkB-Luc2 upon TNF-α stimulation

**B** Luminescence signal from U-937 NFkB-Luc2 upon T cell conditioned-media stimulation

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*Figure 1. In vitro expression of luciferase by TNF-α and T cell-conditioned media. Luciferase expression from U-937-NFkB-Luc2 cells upon signaling activation by (A) TNF-α stimulation (0.01 – 1,000 ng/ mL), (B) conditioned-media stimulation from checkpoint matched non-activated and activated primary CD8+ T cells. N=3 in all experiments. *, P < 0.05.*
**In vitro expression of luciferase in co-culture assay**

Luminescence signal from U-937-NFκB-Luc2 upon co-culture w/ CD4+ T cells

![Graph showing luminescence signal](image)

**Figure 2. In vitro expression of luciferase in co-culture assay.** U-937-NFκB-Luc2 cells were co-cultured with 1:1 (E:T) ratio of primary CD4+ T cells for 6 hours. N=3 in all experiments. *, P < 0.05.

**Biomarker expression**

**Figure 3. Biomarker expression of U-937 parental and U937-NFκB-Luc2.** The expression of SIRPα on the cell surface of U-937 parental and NFκB-Luc2 cell lines was evaluated by flow cytometry.
Figure 4: Cell morphology of U-937 parental and U-937-NFκB-Luc2. Cells were maintained in ATCC recommended culture conditions. Cell morphology was observed under microscopy and images were captured by digital camera.

Doubling time = 19.7 hours
Doubling time = 19.2 hours