



# **TNF-alpha Luciferase Reporter- RAW264.7 Cell Line**

**Catalog number: RC1006**

This package insert must be read in its entirety before using this product.  
For research use only. Not for use in diagnostic procedures.

**TNF-alpha Luciferase Reporter-RAW264.7 Cell Line**

**Catalog Number:** RC1006, **Storage:** Immediately upon receipt, store in liquid nitrogen. (Ship on dry ice.)

**Contents:** Each vial contains  $2 \sim 3 \times 10^6$  cells in 1 ml of 90% FBS + 10% DMSO.

**Description:** The TNF-alpha Luciferase Reporter cell line is a stably transfected RAW264.7 cell line which expresses Renilla luciferase reporter gene under the transcriptional control of the TNF-alpha promoter. Tumor necrosis factor-alpha (TNF-alpha) is one of the major proinflammatory cytokines and can induce systemic inflammation, apoptotic cell death, sepsis and cachexia. Dysregulation of TNF-alpha induction is often involved in various human diseases including inflammatory bowel disease, cancer and Alzheimer's disease. The TNF-alpha induction by lipopolysaccharide (LPS), the Toll-like receptor 4 (TLR4) ligand, is shown in Figure 1.

**Applications:** Functional Assay

**Application Notes:** Functional Assay, detecting the transcriptional activity of TNF-alpha

**Application Details:** Dilute the sample so that the expected range of concentrations fall within the detection range of this kit.

If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples.

Some PubMed article(s) citing the expression level of this target are as follows:

Boster Bio's internal QC testing used:

## Application:

Monitor the TNF-alpha induction activity. Screen for activators or inhibitors of the TNF-alpha signaling pathway.

## Culture conditions:

Cells should be grown at 37°C with 5% CO<sub>2</sub> using DMEM medium supplemented with 10% FBS and 1% Pen/Strep, plus 3 µg/ml of Puromycin. It is recommended to quickly thaw the frozen cells upon receipt or from liquid nitrogen in a 37°C water-bath, transfer to a tube containing 10 ml of growth medium without Puromycin, spin down cells, resuspend cells in pre-warmed growth medium without Puromycin, transfer resuspended cells to T25 flask and culture in 37°C-CO<sub>2</sub> incubator. Leave the T25 flask in the incubator for 1~2 days without disturbing or changing the medium until cells completely recover viability and become adherent. Once cells are over 90% adherent, remove growth medium and passage the cells through trypsinization and centrifugation. At first passage, switch to growth medium containing Puromycin. Cells should be split before they reach complete confluence. To passage the cells, detach cells from culture vessel with Trypsin/EDTA, add complete growth medium and transfer to a tube, spin down cells, resuspend cells and seed appropriate aliquots of cells suspension into new culture vessels. Subcultivation ration = 1:10 to 1:20 weekly.

## Functional validation:

A. Response of TNF-alpha RAW264.7 cells to lipopolysaccharide (LPS). 1. Harvest TNF-alpha – RAW264.7 cells and seed cells into a white solid-bottom 96-well microplate in 100 µl of growth medium at  $8.5 \times 10^4$  cells/well. 2. Incubate cells at 37°C in a CO<sub>2</sub> incubator for overnight. 3. The next day, stimulate cells with various concentrations of LPS. 4. Incubate at 37°C in a CO<sub>2</sub> incubator for 6-16 hours. 5. Add 50 µl of luciferase assay reagent per well. 6. Incubate at room temperature for 1-5 minutes and measure luminescence using a microplate luminometer.

## TNF-alpha Luciferase Reporter-RAW264.7 Cell Line (RC1006) Images

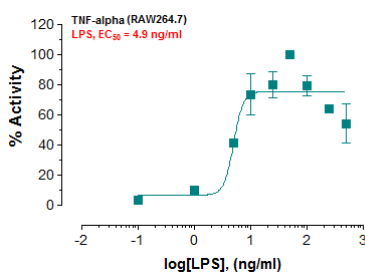


Fig-1: Induction of TNF-alpha promoter activity by LPS in TNF-alpha RAW264.7 cells.

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