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# 14-138ACL: ATF6 Leeporter™ Luciferase Reporter-HeLa Cell Line

**Application :** Functional Assay

## Description

The ATF6 Leeporter™ Luciferase Reporter cell line is a stably transfected HeLa cell line which expresses Renilla luciferase reporter gene under the transcriptional control of the activating transcription factor 6 (ATF6)-response element. ATF6 is a member of the basic-leucine zipper transcription factor family, which is located in the endoplasmic reticulum (ER) membranes and plays a central role in transcriptional activation of ER molecules. The ATF6 induction by Tunicamycin is shown in Figure 1.

## Product Info

| | |
|---|---|
| **Amount :** | 1 Vial |
| **Content :** | Each vial contains 2 ~ 3 x 10^6 cells in 1 ml of 90% FBS + 10% DMSO. |
| **Storage condition :** | Immediately upon receipt, store in liquid nitrogen. |

## Application Note

**Application:**

- Monitor ATF6 transcriptional activity.
- Screen for activators or inhibitors of the ATF6 signaling pathway.

**Culture conditions:**

Cells should be grown at 37°C with 5% $CO_2$ using DMEM medium (w/ L-Glutamine, 4.5g/L Glucose and Sodium Pyruvate) supplemented with 10% heat-inactivated FBS and 1% Pen/Strep, plus 3 µg/ml of Puromycin (Note: Puromycin can be omitted during the reporter cell assays).

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-$CO_2$ incubator.

Leave the T25 flask in the incubator for 1~3 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. To achieve satisfactory results, cells should not be passaged over 16 times.

**Functional validation:**

A. Response of ATF6 Leeporter™ – HeLa cells to Tunicamycin

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1. Harvest ATF6 Leeporter™ – HeLa cells and seed cells into a white solid-bottom 96-well microplate in 100 µl of growth medium at 5 x $10^4$ cells/well.

2. Incubate cells at 37°C in a $CO_2$ incubator for overnight.

3. The next day, stimulate cells with different concentrations of Tunicamycin.

4. Incubate at 37°C in a $CO_2$ incubator for 16 hours.

5. Equilibrate the plate to room temperature for 10 minutes.

6. Add 50 µl of luciferase assay reagent (Abeomics, Cat #17-1101; Refer to the reagent datasheet for the detailed luciferase assay protocol) per well.

7. Read the plate in 1-5 minutes to measure luminescence using a microplate luminometer.



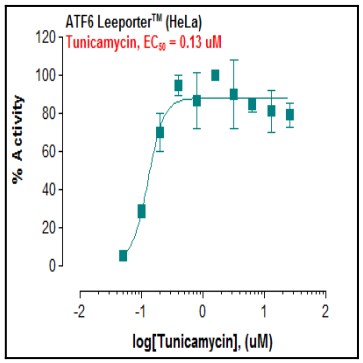


Fig-1: Induction of ATF6 activity by Tunicamycin in ATF6 Leeporter™ - HeLa cells.