



HRE Luciferase Reporter-HeLa Cell Line

Catalog number: RC1018

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

HRE Luciferase Reporter-HeLa Cell Line

Catalog Number: RC1018, **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 HRE Luciferase Reporter cell line is a stably transfected HeLa cell line which expresses Renilla luciferase reporter gene under the transcriptional control of the hypoxia response element (HRE). In response to hypoxia (low oxygen), HREs of target genes are recognized and regulated by the hypoxia-inducible factors (HIFs) which belong to the family of basic helix-loop-helix transcription factors and form heterodimeric complex comprising the alpha subunit (HIF-1 alpha, HIF-2 alpha and HIF-3 alpha) and beta subunit (Arnt1, Arnt2 and Arnt3), among which HIF-1 alpha and HIF-2 alpha are predominant isoforms. Activation of HIFs can also be mediated by chemical hydroxylase inhibitors as hypoxia mimetics including the iron chelator desferrioxamine and cobalt chloride. The HRE induction by cobalt chloride is shown in Figure 1.

Applications: Functional Assay

Application Notes: Functional Assay, detecting the transcriptional activity of HRE

Application Details:

Application:

Monitor the HIF induction activity. Screen for activators or inhibitors of the hypoxia signaling pathway.

Culture conditions:

Cells should be grown at 37°C with 5% CO₂ 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-CO₂ incubator. Leave the T25 flask in the incubator for 2~4 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 HRE HeLa cells to cobalt chloride (C^oCl₂). 1. Harvest HRE HeLa cells and seed cells into a white solid-bottom 96-well microplate in 100 µl of growth medium at 5×10^4 cells/well. 2. Incubate cells at 37°C in a CO₂ incubator for overnight. 3. The next day, stimulate cells with various concentrations of C^oCl₂. 4. Incubate at 37°C in a CO₂ 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.

HRE Luciferase Reporter-HeLa Cell Line (RC1018) Images

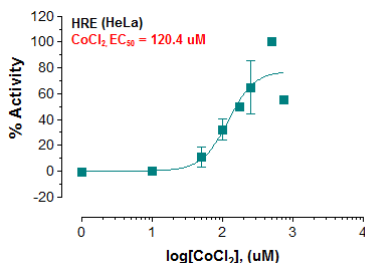


Fig-1: Induction of HRE activity by cobalt chloride in HRE HeLa cells.

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