## Product description

The human embryo kidney cell line HEK293T modified for use as a reporter cell line for bone morphogenetic protein (BMP) signaling. The cell line stably expresses BMP responsive element (BRE)-Luciferase. The cell line also contains a Renilla reporter driven by the thymidine kinase (TK) promoter to act as an internal control. BMP is a transforming growth factor beta (TGF-beta) superfamily member.

**Name:** HEK293T BRE-Luc/TK Renilla cell line

**Unit size:** 1x10^6 cells / vial

**Organism:** Human

**Tissue:** Kidney

**Sub-type:** Continuous

**Parental cell line:** HEK293T

**Growth properties:** Adherent

**Model:** Reporter

**Genetically modified**: Yes (chemical transfection)

**Conditional:** Yes, Luciferase is expressed in the presence of bone morphogenetic protein (BMP) signaling

**Production details:** Made by transfecting the human embryo kidney cell line HEK293T with BRE-Luciferase plasmid, TK Renilla plasmid and pSUPER-retro-puro plasmid for puromycin resistance.

**Biosafety level:** 1

**Pathogen status:** Mycoplasma free

## Contributor(s)

**Inventor:** Caroline Hill
**Institute:** The Francis Crick Institute

## Properties

**Product format:** Frozen

**Unpacking and storage:**

1. Check all containers for leakage or breakage.

2. Remove the frozen cells from the dry ice packaging and immediately place the cells at a temperature below -130°C, preferably in liquid nitrogen vapor, until ready for use.

**Recommended growth medium:** Dulbecco's modified Eagle's medium (DMEM) containing 10% fetal bovine serum (FBS)

**Cryopreservation medium:** Complete growth medium supplemented with 10% DMSO

**Subculture:** Trypsin-EDTA; 5-10 minutes; 5% CO2; 37°C.

**Culture conditions:** 37.0°C ± 1.0°C incubator with 5.0% ± 1.0% $CO_2$

## Handling instructions

1. Please ensure that vials are frozen when received, and store at **<-130 °C long term**. When removing frozen cells from storage, it is important to minimize exposure to room temperature (15 - 25°C). If not proceeding directly to thawing, place the cells on dry ice or in a liquid nitrogen container.
2. **Do not thaw at room temperature.** To thaw, swirl the vial quickly in a 37 °C water bath with O-ring and cap above the water to avoid contamination. Remove from the water bath with a small ice pellet remaining (this should not take more than 2 minutes) and wipe the exterior with 70% ethanol or isopropanol before transferring to a biosafety cabinet. Further steps should be conducted under aseptic conditions.
3. We strongly recommend that the volume of cell suspension is measured at this point, and a 20 uL aliquot be removed for a **viable cell count** using trypan blue or similar dye. This ensures that provided cells are viable, and the cell count can be used to determine volume of growth medium to be added to the cell suspension.
4. Transfer the remaining cell suspension to a 50 mL conical tube using a pipette.
5. Rinse the vial with 1 mL of medium and add it dropwise to the cells, while gently swirling the 50 mL tube.
6. Wash by adding 15 - 20 mL of medium **dropwise**, while gently swirling the tube.
7. Centrifuge the cell suspension at **250 x g for 5 minutes** at room temperature.
8. Carefully remove the supernatant with a pipette, leaving a small amount of medium to ensure the cell pellet is not disturbed. Resuspend the cell pellet by gently flicking the tube.
9. Gently add required volume of culture medium and transfer to a suitable cell culture flask.

## References

- Gori et al. 2021. eLife 8,10:e63545. PMID: 33416497

### Material Citation

If use of this material results in a scientific publication, please cite the material in the following manner: HEK293T BRE-Luc/TK Renilla cell line, was invented by Caroline Hill at The Francis Crick Institute (CancerTools.org #156440).