

## Product description

The T47D/TR-2 cell line is a tamoxifen-resistant derivative of the T47D human breast cancer cell line. It was established, alongside its sister line T47D/TR-1, by adapting T47D/S2 cells to 1  $\mu$ M tamoxifen under reduced serum conditions (2% FCS), resulting in stable resistance to tamoxifen. T47D/TR-2 retains expression of estrogen receptor alpha (ER $\alpha$ ) and progesterone receptor (PR) and proliferates in the presence of tamoxifen. Morphologically, the cells display a polygonal epithelial phenotype and remain adherent in culture. Together with T47D/TR-1, this cell line provides a valuable model system for investigating the heterogeneity of tamoxifen resistance in hormone receptor-positive breast cancer, enabling the discovery of mechanisms driving resistance and the development of strategies to overcome it.

**Name:** T47D/TR-2 cell line

**Organism:** Human

**Disease:** Cancer

**Cancer detailed:** Breast cancer

**Tissue:** Breast

**Parent cell line:** T47D/S2

**Growth properties:** Adherent

**Model:** Cancer cell line

**Donor:** Female, Caucasian, 54Y

**Production details:** Human breast cancer cell line derived from T47D/S2 cells by long-term culture in the presence of 1  $\mu$ M tamoxifen under reduced serum conditions to induce tamoxifen resistance. Clonal selection was performed in medium without tamoxifen. After 10 months in the presence of tamoxifen, the growth rate of the resistant cell lines had increased to a similar level as the parental cell line.

**Cellosaurus ID:** (CVCL\_1D36)

**Biosafety level:** 1

## Contributor(s)

**Inventor:** Anne Lykkesfeldt

**Institute:** Danish Cancer Society

## 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 medium:** Phenol red free RPMI 1640 + 2% FCS + glutamax + 8ug Insulin/ml + 1 uM tamoxifen. Fetal Calf Serum (FCS) typically contains less estrogen than Fetal Bovine Serum (FBS) and is the preferred supplement for this cell line.

**Culture conditions:** 37.0°C ± 1.0°C humidified incubator with 5.0% CO<sub>2</sub>

**Cryopreservation medium:** 10% DMSO in FCS

---

### 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, and a 20 uL aliquot be set aside at this point for a viable cell count using trypan blue or similar dye.
9. Dilute the cell suspension with sufficient medium and distribute 5 mL each into T25 flasks to achieve a seeding density of 1.8 - 2.0 x 10<sup>4</sup> / cm<sup>2</sup>. Place in 37°C, 5% CO<sub>2</sub> incubator.
10. Change medium after 24 hours to remove residual DMSO and then every 2-3 days.
11. Subculture routine: Split 1:7 weekly (slow growing cell line) with Trypsin-EDTA for detachment at 37 °C for 5 minutes.

---

### References

- Larsen et al. 2015. PLoS One. 10(2):e0118346. PMID: 25706943.
- Larsen et al. 2015. BMC Cancer. 15(1):1-15. PMID: 25885472.
- Thrane et al. 2014. Oncogene. 34(32):4199-4210. PMID: 25362855.
- Kirkegaard et al. 2014. Cancer Lett. 344(1):90-100. PMID: 24513268.

### Material Citation

If use of this material results in a scientific publication, please cite the material in the following manner:  
T47D/TR-2 cell line, was invented by Anne Lykkesfeldt (CancerTools.org #152110).

---

PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

While CancerTools.org has made all reasonable efforts to ensure that the information provided by CancerTools.org and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.