BCRJ Code:	0424
Cell Line:	ZR-75-1
Species:	Homo sapiens
Vulgar Name:	Human
Tissue:	Breast; Duct; Mammary gland
Cell Type:	Epithelial
Morphology:	Epithelial
Disease:	Ductal Carcinoma
Growth Properties:	Adherent
Sex:	Female
Age/Ethinicity:	63 Year / White
Applications:	3D cell culture Cancer research
DNA Profile:	Amelogenin: X CSF1PO: 10,11 D13S317: 9 D16S539: 11 D5S818: 13 D7S820: 10,11 TH01: 7,9.3 TPOX: 8 vWA: 16,18 D3S1358: 15,16 D21S11: 31 D18S51: 13,14 Penta_E: 7,14 Penta_D: 14 D8S1179: 11,13 FGA: 20,22 D19S433: 13,14 D2S1338: 16,25
Tumor Formation::	Yes; Yes, forms tumors in nude mice Metastatic: Ascites
Products:	Genes expressed: mucin (apomucin, MUC-1, MUC-2) Expression markers: Estrogen receptor, expressed Isoenzymes: G6PD, B
Biosafety:	1

Addtional Info:	The cells produce high levels of MUC-1 mucin mRNA, low levels of MUC-2 mRNA but do not express the MUC-3 gene.
Culture Medium:	RPMI 1640 with 2.0 mM L-glutamine adjusted to contain 4.5 g/L glucose, 1.0 mM sodium pyruvate and 10% of fetal bovine serum.
Subculturing:	Volumes are given for a 75 cm2 flask. Increase or decrease the amount of dissociation medium needed proportionally for culture vessels of other sizes. Corning T-75 flasks (catalog #430641) are recommended for subculturing this product. Remove and discard culture medium. Briefly rinse the cell layer with 0.25% (w/v) Trypsin- 0.53 mM EDTA solution to remove all traces of serum that contains trypsin inhibitor. Add 2.0 to 3.0 mL of Trypsin-EDTA solution to flask and observe cells under an inverted microscope until cell layer is dispersed (usually within 5 to 15 minutes). Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37°C to facilitate dispersal. Add 6.0 to 8.0 mL of complete growth medium and aspirate cells by gently pipetting. Add appropriate aliquots of the cell suspension to new culture vessels. Incubate cultures at 37°C.
Subculturing Medium Renewal:	2 to 3 times per week
Subculturing Subcultivation Ratio:	1:4 to 1:6 is recommended
Culture Conditions:	Atmosphere: air, 95%; carbon dioxide (CO2), 5% Temperature: 37°C
Cryopreservation:	95% FBS + 5% DMSO (Dimethyl sulfoxide)

Thawing Frozen Cells:

SAFETY PRECAUTION: It is strongly recommended to always wear protective gloves, clothing, and a full-face mask when handling frozen vials. Some vials may leak when submerged in liquid nitrogen, allowing nitrogen to slowly enter the vial. Upon thawing, the conversion of liquid nitrogen back to its gas phase may cause the vial to explode or eject its cap with significant force, creating flying debris.
1. Thaw the vial by gently agitating it in a 37°C water bath. To minimize contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 2 minutes).
2. Remove the vial from the water bath as soon as its contents are thawed and decontaminate it by dipping in or spraying with 70% ethanol. From this point, all operations must be performed under strict aseptic conditions.
3. For cells sensitive to DMSO, it is recommended to remove the cryoprotective agent immediately. Transfer the vial contents to a centrifuge tube containing 9.0 mL of complete culture medium and centrifuge at approximately 125 × g for 5 to 7 minutes.
4. Discard the supernatant and resuspend the cell pellet in the recommended complete medium (see specific batch information for the appropriate dilution ratio).
5. Incubate the culture under appropriate atmospheric and temperature conditions (see "Culture Conditions" for this cell line).

NOTE: It is important to avoid excessive alkalinity of the medium during cell recovery. To minimize this risk, it is recommended to place the culture vessel containing the growth medium in the incubator for at least 15 minutes before adding the vial contents. This allows the medium to stabilize at its normal pH (7.0 to 7.6).

References:

Engel LW, Young NA. Human breast carcinoma cells in continuous culture: a review. Cancer Res. 38: 4327-4339, 1978. PubMed: 212193 Engel LW, et al. Establishment and characterization of three new continuous cell lines derived from human breast carcinomas. Cancer Res. 38: 3352-3364, 1978. PubMed: 688225 Dahiya R, et al. Mucin synthesis and secretion in various human epithelial cancer cell lines that express the MUC-1 mucin gene. Cancer Res. 53: 1437-1443, 1993. PubMed: 8443822 Bellet D, et al. Malignant transformation of nontrophoblastic cells is associated with the expression of chorionic gonadotropin beta genes normally transcribed in trophoblastic cells. Cancer Res. 57: 516-523, 1997. PubMed: 9012484 Couillard S, et al. Comparison of the effects of the antiestrogens EM-800 and tamoxifen on the growth of human breast ZR-75-1 cancer xenografts in nude mice. Cancer Res. 58: 60-64, 1998. PubMed: 9426058

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