BCRJ Code:	0423
Cell Line:	MDA-MB-453
Species:	Homo sapiens
Vulgar Name:	Human
Tissue:	Breast; Mammary gland
Cell Type:	Epithelial
Morphology:	Epithelial
Disease:	Carcinoma; Metastatic
Growth Properties:	Adherent
Sex:	Female
Age/Ethinicity:	48 Year / White
Derivation:	MDA-MB-453 was derived in 1976 by R. Cailleau et al. from an effusion of a 48 year old female patient with metastatic carcinoma of the breast, involving the nodes, brain and both pleural and pericardial cavities.
Applications:	This cell line is a suitable transfection host.
DNA Profile:	Amelogenin: X CSF1PO: 10,12 D13S317: 12 D16S539: 9 D5S818: 11 D7S820: 10 TH01: 6 TPOX: 10 vWA: 17,18 D3S1358: 15 D21S11: 29,31 D18S51: 15,20 Penta_E: 11 Penta_D: 9,10 D8S1179: 10,12 FGA: 18,23 D19S433: 13,14 D2S1338: 23,24
Tumor Formation::	No; No, in immunosuppressed mice Yes, in semisolid medium Metastatic: Pericardial effusion
Products:	Expression markers Fibroblast growth factor (FGF), expressed Isoenzymes AK-1, 1 ES-D, 1-2 G6PD, B GLO-I, 1 PGM1, 1 PGM3, 1

Biosafety:	1
Addtional Info:	The cells overexpress FGF receptors.
Culture Medium:	Leibovitz's L-15 Medium and fetal bovine serum to a final concentration of 10%.
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 without CO2.
Subculturing Medium Renewal:	2 to 3 times per week
Subculturing Subcultivation Ratio:	1:2 to 1:6 is recommended
Culture Conditions:	Atmosphere: air, 100%; carbon dioxide (CO2), 0% Temperature: 37°C
Cryopreservation:	95% FBS + 5% DMSO (Dimethyl sulfoxide)

Thawing Frozen Cells:	SAFETY PRECAUTION: Is highly recommend that protective gloves and clothing always be used and a full face mask always be worn when handling frozen vials. It is important to note that some vials leak when submersed in liquid nitrogen and will slowly fill with liquid nitrogen. Upon thawing, the conversion of the liquid nitrogen back to its gas phase may result in the vessel exploding or blowing off its cap with dangerous force creating flying debris. 1. Thaw the vial by gentle agitation in a 37°C water bath. To reduce the possibility of contamination, keep the Oring and cap out of the water. Thawing should be rapid (approximately 2 minutes). 2. Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by dipping in or spraying with 70% ethanol. All of the operations from this point on should be carried out under strict aseptic conditions. 3. For cells that are sensitive to DMSO is recommended that the cryoprotective agent be removed immediately. Transfer the vial contents to a centrifuge tube containing 9.0 mL complete culture medium and spin at approximately 125 x g for 5 to 7 minutes. 4.Discard the supernatant and Resuspend cell pellet with the recommended complete medium (see the specific batch information for the culture recommended dilution ratio). 5. Incubate the culture in a appropriate atmosphere and temperature (see "Culture Conditions" for this cell line). NOTE: It is important to avoid excessive alkalinity of the medium during recovery of the cells. It is suggested that, prior to the addition of the vial contents, the culture vessel containing the growth medium be placed into the incubator for at least 15 minutes to allow the medium to reach its normal pH (7.0 to 7.6).
References:	Brinkley BR, et al. Variations in cell form and cytoskeleton in human breast carcinoma cells in vitro. Cancer Res. 40: 3118-3129, 1980. PubMed: 7000337 Siciliano MJ, et al. Mutually exclusive genetic signatures of human breast tumor cell lines with a common chromosomal marker. Cancer Res. 39: 919-922, 1979. PubMed: 427779 McLeskey SW, et al. MDA-MB-134 breast carcinoma cells overexpress fibroblast growth factor (FGF) receptors and are growth-inhibited by FGF ligands. Cancer Res. 54: 523-530, 1994. PubMed: 7506125 Cailleau R, et al. Long-term human breast carcinoma cell lines of metastatic origin: preliminary characterization. In Vitro 14: 911-915, 1978. PubMed: 730202 Soker S, et al. Characterization of novel vascular endothelial growth factor (VEGF) receptors on tumor cells that bind VEGF165 via its exon 7-endoded domain. J. Biol. Chem. 271: 5761-5767, 1996. PubMed: 8621443
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