Data Sheet

BCRJ Code:	0419
Cell Line:	P19
Species:	Mus musculus
Vulgar Name:	Mouse; C3H/He
Tissue:	Embryo
Cell Type:	Epithelial
Morphology:	Epithelial
Disease:	Teratocarcinoma
Growth Properties:	Adherent
Sex:	Male
Age/Ethinicity:	Year /
Derivation:	The P19 line was derived from an embryonal carcinoma induced in a C3H/He mouse.
Applications:	This cell line is a suitable transfection host.
Biosafety:	1
Addtional Info:	The line can be cloned at high efficiency in medium containing 0.1 mM 2-mercaptoethanol. The cells are pluripotent. The cell can be induced to differentiate into neural and glial like cells in the presence of 500 nM retinoic acid. In the presence of 0.5% to 1.0% dimethylsulfoxide (DMSO) the cells differentiate to form cardiac and skeletal muscle-like elements, but do not form neural or glial like cells. In the presence of both DMSO and retinoic acid, the cells differentiate as in the presence of retinoic acid alone.

Culture Medium:	Alpha Minimum Essential Medium with ribonucleosides and deoxyribonucleosides; bovine calf serum to a final concentration of 7.5%; fetal bovine serum to a final concentration of 2.5%.
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. Do not allow the cells to become confluent. 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 which 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:	Add fresh medium at least every 48 hours
Subculturing Subcultivation Ratio:	1:10 every 2 to 3 days is recommended
Culture Conditions:	Atmosphere: air, 95%; carbon dioxide (CO2), 5%
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:	Bennicelli JL, et al. Mechanism for transcriptional gain of function resulting from chromosomal translocation in alveolar rhabdomyosarcoma. Proc. Natl. Acad. Sci. USA 93: 5455-5459, 1996. PubMed: 8643596 Jones-Villeneuve EM, et al. Retinoic acid induces embryonal carcinoma cells to differentiate into neurons and glial cells. J. Cell Biol. 94: 253-262, 1982. PubMed: 7107698 McBurney MW, Rogers BJ. Isolation of male embryonal carcinoma cells and their chromosome replication patterns. Dev. Biol. 89: 503-508, 1982. PubMed: 7056443 McBurney MW, et al. Control of muscle and neuronal differentiation in a cultured embryonal carcinoma cell line. Nature 299: 165-167, 1982. PubMed: 7110336
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