Data Sheet

BCRJ Code:	0090
Cell Line:	GH3
Species:	*Rattus norvegicus*
Vulgar Name:	Rat; Wistar/Furth Rat
Tissue:	Pituitary Gland
Cell Type:	Epithelial-Like
Morphology:	Epithelial
Disease:	Tumor
Growth Properties:	Loosely Adherent With Floating Clusters
Sex:	Female
Age/Ethinicity:	7 Month /
Derivation:	Derived from a 7 month female Wistar-Furth rat. GH3 cells produce growth hormone faster than the GH1 cell line and also produce prolactin.
Applications:	This cell line is a suitable transfection host.
Virus Succeptility::	Herpes simplex virus Vesicular stomatitis virus Human poliovirus 1
Products:	prolactin; growth hormone (somatotrophin)
Biosafety:	1

Addtional Info:	The epithelial-like GH3 clone generates growth hormone at a greater rate than the GH1 cells and also produces prolactin. Studies on the control of the production of these protein hormones by the GH3 cells have shown that hydrocortisone stimulates the production of growth hormone and inhibits prolactin production. The cells have been adapted to growth in suspension culture using Eagle's minimum essential medium (spinner) supplemented with 15% horse serum and 2.5% FBS. Under these conditions the cells continue to produce both growth hormone and prolactin
Culture Medium:	F-12K Medium (Kaighn's Modification of Ham's F-12 Medium) contains 2 mM L-glutamine and 15% of horse serum and 2.5% 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. Remove and discard culture medium. Sometimes many cells are floating, they can be harvested by centrifugation of medium instead of discarding it. Add 2.0 to 3.0 mL of 0.25% (w/v) Trypsin- 0.53 mM-EDTA solution to flask and observe cells under an inverted microscope until cell layer is dispersed (usually within 5 to 15 minutes). 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. NOTE: For more information on enzymatic dissociation and subculturing of cell lines consult Chapter 12 in Culture of Animal Cells, a manual of Basic Technique by R. Ian Freshney, 6th edition, published by Alan R. Liss, N.Y., 2010.
Subculturing Medium Renewal:	2 to 3 times per week
Subculturing Subcultivation Ratio:	1:2 to 1:4
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:

Bancroft FC, et al. Control of growth hormone production by a clonal strain of rat pituitary cells. Stimulation by hydrocortisone. J. Cell Biol. 43: 432-441, 1969. PubMed: 5389137 Tashjian AH Jr., et al. Establishment of clonal strains of rat pituitary tumor cells that secrete growth hormone. Endocrinology 82: 342-352, 1968. PubMed: 4951281 Tashjian AH Jr., et al. Production of both prolactin and growth hormone by clonal strains of rat pituitary tumor cells. J. Cell Biol. 47: 61-70, 1970. PubMed: 5513559 Bancroft FC, Tashjian AH Jr.. Growth in suspension culture of rat pituitary cells which produce growth hormone and prolactin. Exp. Cell Res. 64: 125-128, 1971. PubMed: 5541958 Bancroft FC, Tashjian AH Jr.. Control of the production of two protein hormones by rat pituitary cells in culture. In Vitro 6: 180-189, 1970. PubMed: 5535574 Wood WM, et al. Thyroid hormone receptor beta2 promoter activity in pituitary cells is regulated by Pit-1. J. Biol. Chem. 271: 24213-24220, 1996. PubMed: 8798664

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Cellosaurus: CVCL_0273