BCRJ Code:	0389
Cell Line:	RWPE-1
Species:	Homo sapiens
Vulgar Name:	Human
Tissue:	Prostate
Cell Type:	Epithelial
Morphology:	Epithelial
Disease:	Normal
Growth Properties:	Adherent
Sex:	Male
Age/Ethinicity:	54 Year /
Derivation:	Epithelial cells derived from the peripheral zone of a histologically normal adult human prostate were transfected with a single copy of the human papilloma virus 18 (HPV-18).
Tumor Formation::	No
Products:	Antigen Expression kallikrein 3, KLK3 (prostate specific antigen, PSA); Homo sapiens, expressed (upon exposure to androgen) Receptor Expression: androgen receptor, expressed Genes Expressed: cytokeratin 18, cytokeratin 8 Tumor Supressor Gene(s): p53 +, pRB Cellular Products: cytokeratin 18; cytokeratin 8
Biosafety:	2

Culture Medium:	The base medium for this cell line is provided by Invitrogen (GIBCO) as part of a kit: Keratinocyte Serum Free Medium (K-SFM), Kit Catalog Number 17005-042. This kit is supplied with each of the two additives required to grow this cell line (bovine pituitary extract (BPE) and human recombinant epidermal growth factor (EGF). To make the complete growth medium, you will need to add the following components to the base medium: - 0.05 mg/ml BPE - provided with the K-SFM kit - 5 ng/ml EGF - provided with the K-SFM kit. NOTE: Do not filter complete medium.
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. Briefly rinse the cell layer with Ca++/Mg++ free Dulbecco's phosphate-buffered saline (D-PBS). Add 2.0 to 3.0 mL (to a T-25 flask) or 3.0 to 4.0 mL (to a T-75 flask) of 0.05% Trypsin - 0.53mM EDTA solution, diluted 1:1 with D-PBS, and place flask in a 37°C incubator for 5 to 8 minutes. Observe cells under an inverted microscope until cell layer is dispersed (usually within 5 to 10 minutes). Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Add 6.0 to 8.0 mL of 0.1% Soybean Trypsin Inhibitor (ATCC® 30-2014™) or 2% fetal bovine serum in D-PBS, as appropriate, and aspirate cells by gently pipetting. Transfer cell suspension to centrifuge tube and spin at approximately 125 x g for 5 to 7 minutes. Discard supernatant and resuspend cells in fresh serum-free growth medium. Add appropriate aliquots of cell suspension to new culture vessels. An inoculum of 2 X 104 to 4 X 104 viable cells/cm2 is recommended. Incubate cultures at 37°C. We recommend that you maintain cultures at a cell concentration between 4 X 104 and 7 X 104 cells/cm2. Cells grown under serum-free or reduced serum conditions may not attach strongly during the 24 hours after subculture and should be disturbed as little as possible during that period. 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:	Every 2 days
Subculturing Subcultivation Ratio:	1:3 to 1:5
Culture Conditions:	Atmosphere: air, 95%; carbon dioxide (CO2), 5% 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:

Webber MM, Rhim JS. Immortalized and malignant human prostatic cell lines. US Patent 5,824,488 dated Oct 20 1998 Bello D, et al. Androgen responsive adult human prostatic epithelial cell lines immortalized by human papillomavirus 18. Carcinogenesis 18: 1215-1223, 1997. PubMed: 9214605 Webber MM, et al. Acinar differentiation by non-malignant immortalized human prostatic epithelial cells and its loss by malignant cells. Carcinogenesis 18: 1225-1231, 1997. PubMed: 9214606 Okamoto M, et al. Interleukin-6 and epidermal growth factor promote anchorage-independent growth of immortalized human prostatic epithelial cells treated with N-methyl-N-nitrosourea. Prostate 35: 255-262, 1998. PubMed: 9609548 Webber MM, et al. Immortalized and tumorigenic adult human prostatic epithelial cell lines: characteristics and applications Part 2. Tumorigenic cell lines. Prostate 30: 58-64, 1997. PubMed: 9018337 Webber MM, et al. Immortalized and tumorigenic adult human prostatic epithelial cell lines: characteristics and applications. Part 3. Oncogenes, suppressor genes, and applications. Prostate 30: 136-142, 1997. PubMed: 9051152 Kremer R, et al. ras Activation of human prostate epithelial cells induces overexpression of parathyroid hormone-related peptide. Clin. Cancer Res. 3: 855-859, 1997. PubMed: 9815759 Jacob K, et al. Osteonectin promotes prostate cancer cell migration and invasion: a possible mechanism for metastasis to bone. Cancer Res. 59: 4453-4457, 1999. PubMed: 10485497 Achanzar WE, et al. Cadmium induces c-myc, p53, and c-jun expression in normal human prostate epithelial cells as a prelude to apoptosis. Toxicol. Appl. Pharmacol. 164: 291-300, 2000. PubMed: 10799339 Achanzar WE, et al. Cadmium-induced malignant transformation of human prostate epithelial cells. Cancer Res. 61: 455-458, 2001. PubMed: 11212230 Bello-DeOcampo D, et al. Laminin-1 and alpha6beta1 integrin regulate acinar morphogenesis of normal and malignant human prostate epithelial cells. Prostate 46: 142-153, 2001. PubMed: 11170142 Webber MM, et al. Human cell lines as an in vitro/in vivo model for prostate carcinogenesis and progression. Prostate 47: 1-13, 2001. PubMed: 11304724 Epithelial cells from a histologically normal adult human prostate were isolated and subsequently transfected with a plasmid carrying one copy of the human papillomavirus 18 (HPV-18) genome to establish the RWPE-1 (ATCC CRL-11609) cell line. Quader ST, et al. Evaluation of the chemopreventive potential of retinoids using a novel in vitro human prostate carcinogenesis model. Mutat. Res. 496: 153-161, 2001. PubMed: 11551491 upregulated upon exposure to androgen Bello D, et al. Androgen responsive adult human prostatic epithelial cell lines immortalized by human papillomavirus 18. Carcinogenesis 18: 1215-1223, 1997. PubMed: 9214605

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ATCC: CRL-11609