BCRJ Code:	0128
Cell Line:	KB
Species:	Homo sapiens
Vulgar Name:	Human
Tissue:	Cervix, Hela Contaminant
Morphology:	Epithelial
Disease:	Carcinoma, Papilloma
Growth Properties:	Adherent
Sex:	Male
Derivation:	Originally derived from an epidermoid carcinoma of the mouth of an adult male Caucasian. It was one of the early attempts to isolate and serially propagate a human cell line directly on glass as a monolayer. NB: This cell line contains HeLa marker chromosomes and expresses type A G6PD. For further information see Nature 1976;259:211; In Vitro 1978;14:469.
DNA Profile:	Amelogenin: X CSF1PO: 9,10 D13S317: 12,13.3 D16S539: 9,10 D5S818: 11,12 D7S820: 8,12 THO1: 7 TPOX: 8,12 vWA: 16,18
Products:	Keratin
Biosafety:	2
Addtional Info:	The cells are positive for keratin by immunoperoxidase staining. KB cells have been reported to contain human papillomavirus 18 (HPV-18) sequences. NOTE: Cells of this line contain HeLa marker chromosomes, and were derived via HeLa contamination
Culture Medium:	Dulbecco's Modified Eagle's Medium (DMEM) with 1% non-essential amino acids, 2 mM L-glutamine, 1.0 g/L glucose and 10% of fetal bovine serum.

Subculturing:	Remove medium, and rinse with PBS without calcium and magnesium. Remove the solution and add an additional 1 to 2 mL of trypsin-EDTA solution. Allow the flask to sit at room temperature (or at 37°C) until the cells detach. Add fresh culture medium, aspirate and dispense into new culture flasks. 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:	1:4 to 1:10
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:	Eagle H. Propagation in a fluid medium of a human epidermoid carcinoma, strain KB. Proc. Soc. Exp. Biol. Med. 89: 362-364, 1955. PubMed: 13254761 Boshart M, et al. A new type of papillomavirus DNA, its presence in genital cancer biopsies and in cell lines derived from cervical cancer. EMBO J. 3: 1151-1157, 1984. PubMed: 6329740 Salzman NP. Animal Cell Cultures. Science 133:1559-65. 1961 PubMed: 13745868 Eagle H, Foley GE. Cytotoxicity in human cell cultures as a primary screen for the detection of anti-tumor agents. Cancer Res. 18: 1017-1025, 1958. PubMed: 13596943 Foley GE, Handler AH. Differentiation of "Normal" and Neoplastic Cells Maintained in Tissue Culture by Implantation into Normal Hamsters. Proc Soc Exp Biol Med 94: 661-664 1957. PubMed: 13431913 Eagle H, et al. Viral susceptibility of a human carcinoma cell (strain KB). Proc. Soc. Exp. Biol. Med. 91: 361-364, 1956. PubMed: 13322936 St. Geme JW, et al. Characterization of the genetic locus encoding Haemophilus influenzae type b surface fibrils. J. Bacteriol. 178: 6281-6287, 1996. PubMed: 8892830 Chang K, Pastan I. Molecular cloning of mesothelin, a differentiation antigen present on mesothelium, mesotheliomas, and ovarian cancers. Proc. Natl. Acad. Sci. USA 93: 136-140, 1996. PubMed: 8552591 Lee RJ, Huang L. Folate-targeted, anionic liposome-entrapped polylysine-condensed DNA for tumor cell-specific gene transfer. J. Biol. Chem. 271: 8481-8487, 1996. PubMed: 8626549
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