BCRJ Code:	0167
Cell Line:	MDBK
Species:	Bos taurus
Vulgar Name:	Cow, Bovine
Tissue:	Kidney
Morphology:	Epithelial
Disease:	Normal
Growth Properties:	Adherent
Sex:	Male
Derivation:	The MDBK cell line was derived from a kidney of an apparently normal adult steer
Applications:	This cell line is a suitable transfection host.
Virus Succeptility::	Vesicular stomatitis, Orsay (Indiana) Infectious bovine rhinotracheitis Bovine parvovirus Bovine adenovirus 2 Bovine adenovirus 3 Bovine viral diarrhea virus 1 , Bovine viral diarrhea virus 1 Parainfluenza 3
Virus Resistance::	POLIOVIRUS 2
Products:	keratin
Biosafety:	1
Addtional Info:	Also known as MDBK (NBL-1).
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:	Twice 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:	Madin SH, Darby NB Jr.. Established kidney cell lines of normal adult bovine and ovine origin. Proc. Soc. Exp. Biol. Med. 98: 574-576, 1958. PubMed: 13567776 Bolin SR, et al. Survey of cell lines in the American Type Culture Collection for bovine viral diarrhea virus. J. Virol. Methods 48: 211-221, 1994. PubMed: 7989438 Loffler S, et al. CD9, a tetraspan transmembrane protein, renders cells susceptible to canine distemper virus. J. Virol. 71: 42-49, 1997. PubMed: 8985321 Russell DW, Miller AD. Foamy virus vectors. J. Virol. 70: 217-222, 1996. PubMed: 8523528 USEPA Manual of Methods for Virology - EPA publication. Washington, DC:Environmental Protection Agency;EPA EPA 600/4-84/013 (R9), 2001 .
Depositors:	Banco de Células do Rio de Janeiro
Cellosaurus:	CVCL_0421