BCRJ Code:	0245
Cell Line:	Vero
Species:	*Chlorocebus sabaeus*
Vulgar Name:	Monkey; African Green Monkey
Tissue:	Kidney
Morphology:	Epithelial
Disease:	Normal
Growth Properties:	Adherent
Age/Ethinicity:	ADULT /
Derivation:	The Vero cell line was established from kidney of normal adult African green monkey at the Chiba University, Japan. It was brought to NIH by Dr Simizu. This ce4ll line was extensively used in virus replication studies and plaque assays. It has been
Applications:	This cell line can be used for the detection of verotoxin. This cell line can be used for efficacy testing. This cell line can be used to study malaria biology. This cell line can be used for media testing. This cell line can be used for mycoplasma testing. This cell line is a suitable transfection host. This cell line can be used for the detection of virus in ground beef.

Virus Succeptility::	Human poliovirus 1 Human poliovirus 2 Human poliovirus 3 Getah virus Pixuna virus Ross River virus Semliki Forest virus Kokobera virus Modoc virus Guaroa virus Tacaribe virus , Tacaribe virus SV-5 (parainfluenza type 2) SV40 virus Measles virus Rubella virus , Rubella virus Reovirus type 2 Reovirus 3 Simian adenovirus 3 Simian adenovirus 17 Simian adenovirus 11 Simian adenovirus 1 Simian adenovirus 20 Simian adenovirus 20 Simian adenovirus 18 Simian adenovirus 16 Simian adenovirus 8 Simian adenovirus 17 Simian adenovirus 19 Simian adenovirus 21 Simian adenovirus 25 Simian adenovirus 22 Simian adenovirus 23 Simian adenovirus 38 Simian adenovirus 37 Simian adenovirus 27 Simian adenovirus 39 Simian adenovirus 32 Simian adenovirus 34 Simian adenovirus 31 Simian adenovirus 33 Simian adenovirus 36
Virus Resistance::	Apeu; Ossa
Biosafety:	1
Culture Medium:	Dulbecco's Modified Eagle's Medium (DMEM) with 2 mM L-glutamine, 1.0 g/L glucose and 10% of fetal bovine serum.
Subculturing:	Volumes used in this protocol are for 75 cm2 flask; proportionally reduce or increase amount of dissociation medium for culture vessels of other sizes. Remove and discard culture medium. Briefly rinse the cell layer with PBS without calcium and magnesium to remove all traces of serum that 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. 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 to 3 days
Subculturing Subcultivation Ratio:	1:3 to 1:6
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:	Nippon Rinsho 21: 1209-, 1963; Proc. Soc. Exp. Biol. Med. 125: 119-, 1967.
Depositors:	Banco de Células do Rio de Janeiro
Cellosaurus:	CVCL_0059