BCRJ Code:	0332
Cell Line:	LoVo
Species:	Homo sapiens
Vulgar Name:	Human
Tissue:	Colon; derived from metastatic site: left supraclavicular region
Disease:	Dukes' type C, grade IV, colorectal adenocarcinoma
Growth Properties:	Adherent
Sex:	Male
Age/Ethinicity:	56 Year /
Derivation:	LoVo was initiated in 1971 from a fragment of a metastatic tumor nodule in the left supraclavicular region of a 56-year-old Caucasian male patient with a histologically proven diagnosis of adenocarcinoma of the colon.
Applications:	This cell line is a suitable transfection host.
Tumor Formation::	Yes, in nude mice.
Products:	Carcinoembryonic antigen (CEA) 908 ng/10 exp6 cells/10 days
Biosafety:	1
Culture Medium:	F-12K Medium (Kaighn's Modification of Ham's F-12 Medium) contains 2 mM L-glutamine 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 1.0 to 3.0 mL of Trypsin-EDTA solution to flask and observe cells under an inverted microscope until the 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. Transfer cell suspension to centrifuge tube and spin at approximately 125 x g for 5 to 10 minutes. Discard supernatant and resuspend cells in fresh growth medium. Add appropriate aliquots of cell suspension to new culture vessels. Place culture vessels in incubators 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:	1:3 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:

Drewinko B, et al. Further biologic characteristics of a human carcinoembryonic antigen-producing colon carcinoma cell line. J. Natl. Cancer Inst. 61: 75-83, 1978. PubMed: 276641 Drewinko B, Yand LY. Restriction of CEA synthesis to the stationary phase of growth of cultured human colon carcinoma cells. Exp. Cell Res. 101: 414-416, 1976. PubMed: 964319 Drewinko B, et al. Establishment of a human carcinoembryonic antigen-producing colon adenocarcinoma cell line. Cancer Res. 36: 467-475, 1976. PubMed: 1260746 Trainer DL, et al. Biological characterization and oncogene expression in human colorectal carcinoma cell lines. Int. J. Cancer 41: 287-296, 1988. PubMed: 3338874 Keesee SK, et al. Nuclear matrix proteins in human colon cancer. Proc. Natl. Acad. Sci. USA 91: 1913-1916, 1994. PubMed: 8127905 Drewinko B, et al. Response of exponentially growing, stationary-phase, and synchronized cultured human colon carcinoma cells to treatment with nitrosourea derivatives. Cancer Res. 39: 2630-2636, 1979. PubMed: 445465 Miranda L, et al. Isolation of the human PC6 gene encoding the putative host protease for HIV-1 gp160 processing in CD4+ T lymphocytes. Proc. Natl. Acad. Sci. USA 93: 7695-7700, 1996. PubMed: 8755538

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