Data Sheet

BG-1 Human Ovarian Adenocarcinoma Cell Line

Cancer Cell Line

SCC415

Pack size: ≥ 1x10^6 viable cells/vial

Store in liquid nitrogen

FOR RESEARCH USE ONLY

Not for use in diagnostic procedures. Not for human or animal consumption.

Background

Worldwide, ovarian cancer is estimated to cause over 140,000 deaths annually.[1] The difficulty of early detection means that nearly 3 out of 4 cases are diagnosed at an advanced stage,[1] highlighting the necessity of clinically relevant cellular models for understanding the ovarian cancer physiology at advanced stages. Ovarian cancers retaining functional expression of progesterone receptor and estrogen receptors typically have a better prognosis than cancers lacking expression of these receptors, making these carcinomas amenable to therapeutic intervention.

The BG-1 human ovarian adenocarcinoma cell line is one of the most widely used cell lines in ovarian cancer research, characterized by clinically relevant expression levels of both progesterone receptor and estrogen receptor and a highly robust response to exogenously-applied estrogen in vitro.[2] BG-1 cells secrete cancer antigen 125 (CA-125)[3] and expressed E-cadherin, an epithelial cell marker.[4] The BG-1 human ovarian adenocarcinoma was derived from a stage III primary solid tumor and is a representative model of the most common ovarian cancers.

Source

The BG-1 cell line was derived from a poorly differentiated stage III solid primary ovarian tumor from a patient of unspecified age.[2] SCC415 has been genetically validated as an authentic BG-1 cell line.

Short Tandem Repeat (STR Profile)

D3S1358:	16, 17	D13S317:	10
D7S820:	12	D16S539:	9, 11
vWA:	14, 17	TH01:	8, 9.3
FGA:	20, 24	TPOX:	8, 11
D8S1179:	12, 13	CSF1PO:	10, 11
D21S11:	29, 33.2, 34.2	Amelogenin:	X
D18S51:	12, 15	Penta D:	11, 12
D5S818:	12	Penta E:	7, 12

Cancer cell lines are inherently genetically unstable. Instability may arise in the form of loss of heterozygosity of alleles at one or more genetic sites with increased passages.

Quality Control Testing

- BG-1 human ovarian adenocarcinoma cells are verified to be of human origin and negative for mouse, rat, Chinese hamster, Golden Syrian hamster, and non-human primate interspecies contamination, as assessed by a Contamination Clear panel by Charles River Animal Diagnostic Services.
- Cells tested negative for infectious diseases against a Human Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells tested negative for mycoplasma.

Storage and Handling

BG-1 human ovarian adenocarcinoma cells should be stored in liquid nitrogen until use. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting the cell marker expression and functionality.

Representative Data

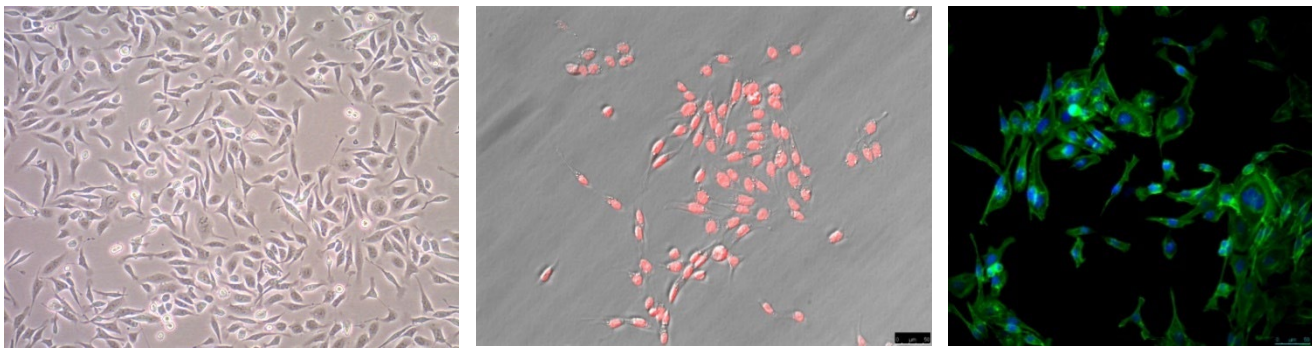

Figure 1. Bright-field image of BG-1 human ovarian adenocarcinoma cells one day (**A**) after thaw. Cells express the ovarian marker, Estrogen Receptor alpha (ERα) (**B**, Cat. No. 04-1564) and actin (**C**, Cat. No. P5282).

Protocols

Thawing the Cells

1. Do not thaw the cells until the recommended medium is on hand. Cells can grow on standard tissue cultureware surfaces without any additional coating.

   Cells are thawed and expanded in BG-1 Expansion Medium comprising DMEM/F12, with HEPES, L-Glutamine medium (Cat. No. DF-041) and 10% FBS (Cat. No. ES-009-B).

2. Remove the vial of frozen BG-1 cells from liquid nitrogen and incubate in a 37 °C water bath. Closely monitor until the cells are completely thawed. Maximum cell viability is dependent on the rapid and complete thawing of frozen cells.

   IMPORTANT: Do not vortex the cells.

3. As soon as the cells are completely thawed, disinfect the outside of the vial with 70% ethanol. Proceed immediately to the next step.
4. In a laminar flow hood, use a 1 or 2 mL pipette to transfer the cells to a sterile 15 mL conical tube. Be careful not to introduce any bubbles during the transfer process.
5. Using a 10 mL pipette, slowly add dropwise 9 mL of BG-1 Expansion Medium (Step 1 above) to the 15 mL conical tube.

   IMPORTANT: Do not add the entire volume of media all at once to the cells. This may result in decreased cell viability due to osmotic shock.

6. Gently mix the cell suspension by slowly pipetting up and down twice. Be careful not to introduce any bubbles.

   IMPORTANT: Do not vortex the cells.

7. Centrifuge the tube at 300 x *g* for 2-3 minutes to pellet the cells.
8. Decant as much of the supernatant as possible. Steps 5-8 are necessary to remove residual cryopreservative (DMSO).
9. Resuspend the cells in 15 mL of BG-1 Expansion Medium.
10. Transfer the cell mixture to a T75 tissue culture flask.
11. Incubate the cells at 37 °C in a humidified incubator with 5% CO_2.

Subculturing the Cells

Cells are strongly adherent. 5X Trypsin (Sigma T2605) is necessary to detach the cells.

1. Do not allow the cells to grow to confluency. BG-1 should be passaged at ~ 70-80% confluency.
2. Carefully remove the medium from the T75 tissue culture flask containing the 80% confluent layer of BG-1 cells.
3. Rinse the flask with 10 mL 1X PBS. Aspirate after the rinse.
4. Apply 5-7 mL of 5X Trypsin (Cat. No. T2605) and incubate in a 37 °C incubator for 10-15 minutes.
5. Inspect the flask and ensure the complete detachment of cells by gently tapping the side of the flask with the palm of your hand.
6. Add 5-7 mL of BG-1 Expansion Medium to the plate.
7. Gently rotate the flask to mix the cell suspension. Transfer the dissociated cells to a 15 mL conical tube.
8. Centrifuge the tube at 300 x *g* for 3-5 minutes to pellet the cells.
9. Discard the supernatant, then loosen the cell pellet by tapping the tip of the tube with a finger.
10. Apply 2-5 mL of BG-1 Expansion Medium to the conical tube and resuspend the cells thoroughly. Large cell clumps may be broken up by gentle trituration.

    IMPORTANT: Do not vortex the cells.
11. Count the number of cells using a hemocytometer.
12. Plate the cells to the desired density. Typical split ratio is 1:6.

Cryopreservation of the Cells

BG-1 human ovarian adenocarcinoma cells may be frozen in BG-1 Expansion Medium supplemented with 10% DMSO using a Nalgene® slow freeze Mr. Frosty™ container.

References

1. Jemal A, Bray F, Center MM, FerlayJ, Ward E, Forman D. *CA Cancer J Clin.* 2011; 61(2):69-90.
2. Geisinger KR et al. *Cancer.* 1989; 63(2):280-288.
3. Li Y et al. *Mol Endocrinol* 2014; 28(12):2072-2081.
4. Yi BR, Kim TH, Kim YS, Choi KC. *Int J Oncol* 2015; 46(1): 272-280.

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