

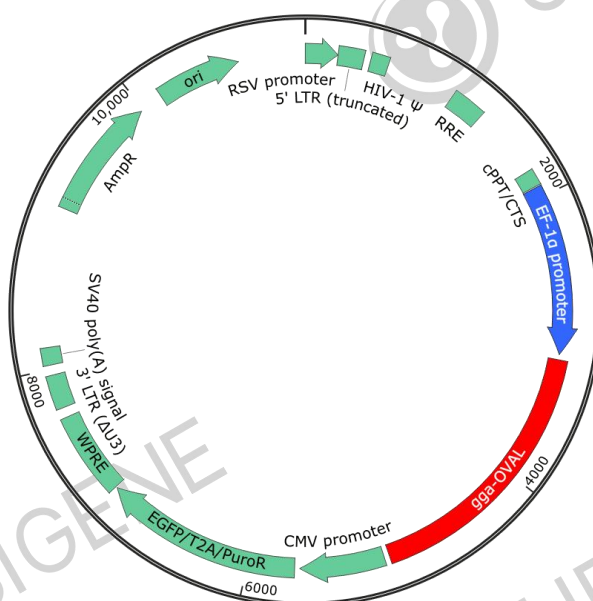
Cell Use Instruction

gga-OVAL Gene Overexpression in MC38 Cell Line

Cell Info

Catalog	YC-A002-ggaOVAL-P		
Cell Line	MC38-ggaOVAL	Morphology	Epithelial-like, adherent
Gene Name	gga-OVAL	Passage ratio	1:2~1:4
Culture method	90%DMEM+10% FBS;		
	Ubigen didn't use P/S. But client could use P/S after cells grow in good condition after thawing.		
Cryopreservation solution	50%DMEM+40%FBS+10%DMSO	Puromycin screening	1000μg/mL
Special Note	None		

Plasmid Backbone Map



Introduction

Ovalbumin, the main component of egg white, is usually used as a marker to study the regulation of hormones on gene expression in tissues. The stable cell line was constructed by cell infection with Ubigen's ggaOVAL lentivirus (catalog number:

Tel: +86 153 6067 3248(Int'l)

US Toll free: 855 777 3210

EU Toll free: 800 3272 9252

Korea Toll free: 001 800 3272 9252

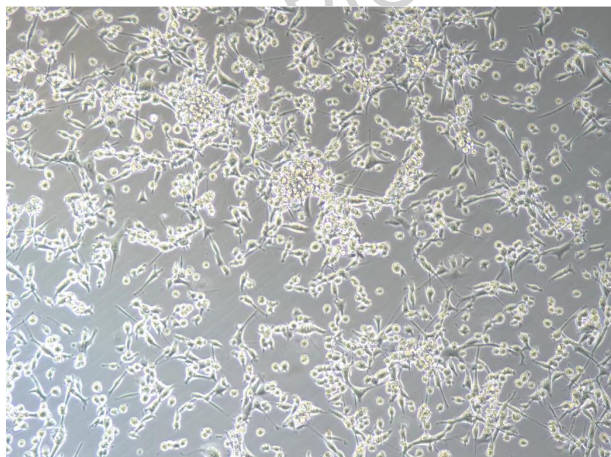
Email: info@ubigene.com

Web: www.ubigene.us

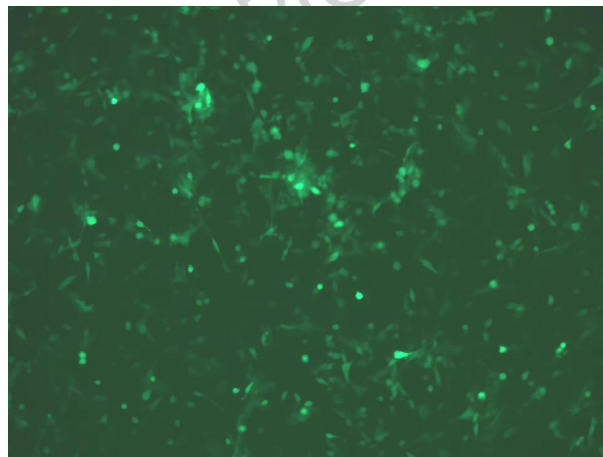
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YV-OE-LV001-ggaOVAL-1000). According to the carried gene resistance marker and the pre-explored optimal antibiotic screening concentration, the cells were screened by the corresponding antibiotic, and eventually, the stable cell line that can stably express ovalbumin was obtained.

■ Cell image



MC38-ggaOVAL-100X



MC38-ggaOVAL-100X

■ RT-QPCR result

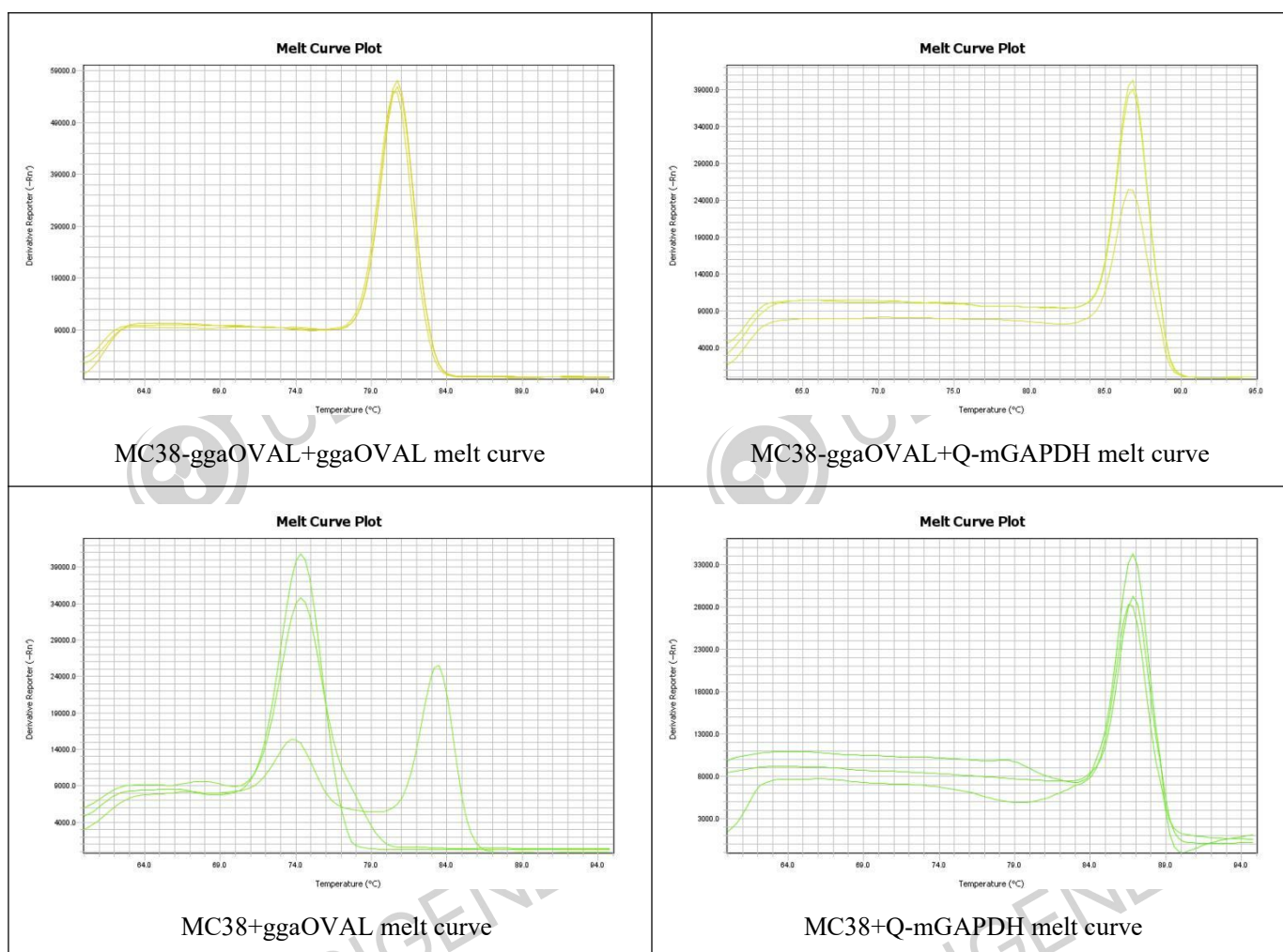
(1) Primers

Name	Primer	Sequence	Size
gga-OVAL	Forward	5'-CCTGTGCAGATGATGTACCAGA -3'	113bp
	Reverse	5'-AGCACCAACATGCTCATTGTC-3'	
Q-mGAPDH	Forward	5'-GTCAAGGCCGAGAATGGGAA-3'	237 bp
	Reverse	5'-CTCGTGGTTCACACCCATCA-3'	

(2) CT value

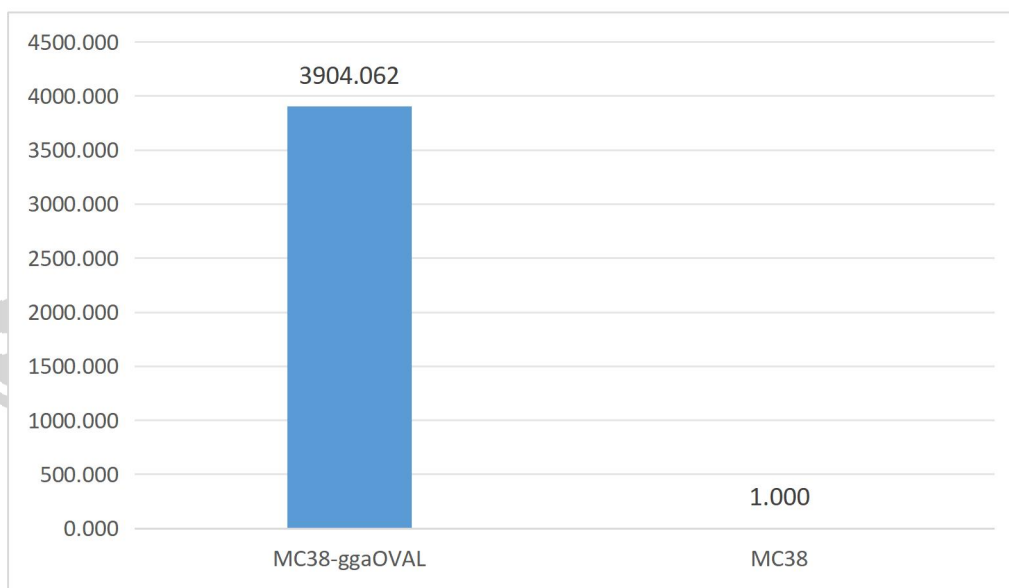
No.	Sample	gga-OVAL Ct Mean	Q-mGAPDH Ct Mean	ΔC_T Mean	$\Delta\Delta C_T$	Expression Rate
1	MC38-ggaOVAL	22.833	15.962	6.871	-11.931	3904.062
2	MC38	34.568	15.766	18.802	0.000	1.000

(3) Melt curve



(4) Gene Expression

Expression rate



(5) Conclusion

Compared with MC38 cell line, the expression rate of MC38-ggaOVAL cell line was 390406.2%. The generation of stable ggaOVAL-overexpression cell line was successful.

■ Cell Reception

Cryopreserved cells:

In the case of cryopreserved cells transported with dry ice, upon received, immediately transfer to liquid nitrogen for storage or store briefly at -80°C freezer, or proceed directly to cell thawing. Upon cell thawing, please count the cell number and cell viability and take some photos of the cells under different magnification (e.g. at 100x and 40x) as the records.

Notice: Upon received, please ensure to take photos of the package, including dry ice and the tubes, and contact us within 24 hrs if any abnormalities such as dry ice has ran out, the cap of the cryovial is dislodged, broken and the cell is contaminated.

■ Cell Thawing

- 1) Preparation: warm up the complete culture medium in 37°C water bath for 30 mins. Transfer the cryopreserved vial from liquid nitrogen to - 80°C freezer, and leave for several minutes to volatilize residual liquid nitrogen;
- 2) Inside the ultra-clean bench, pipet 6-7 ml of complete medium into a 15 ml centrifuge tube;
- 3) Take out the cryopreserved vial from - 80°C freezer and leave in dry ice temporarily, shake slightly before thawing to remove residual dry ice and liquid nitrogen. Then hold the cap with forceps, quickly thaw cells in a 37°C water bath by gently swirling the vial (Note: keep the cap out of the water). In about 1 minute, it would completely thaw;

- 4) Inside the ultra-clean bench, sterilize the outer surface of the vial by wiping with an alcohol cotton pellet and leave it to dry. Transfer the thawed cells to the prepared centrifuge tube (step 2) by pipette, close the lid, and centrifuge at 1100 rpm for 4 mins at room temp to collect the cells;
- 5) Inside the ultra-clean bench, carefully remove and discard the supernatant. Resuspend cell pellet with 1ml of fresh complete medium and then transfer to a T25 flask containing 4 ml of complete medium, label the flask with cell name, date and passage no., incubate the flask in a 37°C, 5%CO₂ incubator.

Note: Please do not thaw the cells directly to a T75 flask or 10 cm culture dish.

■ Cell Passaging

- 1) As long as the cells are 80%-90% confluent, it is ready to passage. Inside the ultra-clean bench, remove and discard the medium from the flask and briefly rinse the cell 1-2 times with 1×PBS (2-3 ml for T25 flask, 4-5 ml for T75) to remove residual medium and serum;
- 2) Add the corresponding volume of trypsin solution (see below table 1 for details) and allow trypsin completely cover the cells, place the flask into the incubator and incubate for 1-2 mins (If cells are hard to digest, allow appropriate extension of incubation), until the majority of the cells become round and non-adherent as observed under the microscope, a large number of cells detached from each side when gently shaking and tapping the flask, terminate trypsin digestion immediately;
- 3) Add complete medium to stop digestion, the volume is 2 times of trypsin. Then gently pipet the cells several times to allow all cells to be completely detached from the flask;
- 4) Transfer the cell suspension with a 10 ml pipette into a 50 ml centrifuge tube, rinse the residual cells from the flask using appropriate volume of PBS , then collect and put them together to the centrifuge tube;
- 5) Centrifuge at 1100 rpm for 4 mins at room temp. After centrifugation, remove and discard the supernatant and resuspend the cells with 2 ml of complete medium;
- 6) Cells need to be passaged at appropriate passage ratio, 1:3 for the first passage, increasing the passaging ratio if the cells are grown to confluence within two days, or decreasing the passaging ratio if the cells are not grown to confluence in 3-4 days.

Table 1. Volume of Trypsin solution added to different size of culture plates/flasks

Size of culture plates/flasks	Trypsin Volume added
6-well plate	0.5mL
T25	1mL
T75	2-3mL
T175	3-4mL

Note: In order to maintain the stable expression of gga-OVAL gene, it is recommended to add antibiotics for culture during cell passaging (see the concentration for maintenance above).

■ Cell cryopreservation

- 1) Same as procedures of cell passaging, inside the ultra-clean bench, digest the cells to a single-cell suspension, and terminate digestion by adding complete medium. All liquid is transferred to a 50 ml centrifuge tube;
- 2) Mix well by pipetting and take 20 μ L for cell counting;
- 3) Centrifuge at 1100 rpm for 4 mins at room temp. After centrifugation, remove and discard the supernatant, and resuspend the cells with 1-2 ml of 4°C pre-cooled cryopreservation medium (use the one you usually use in lab, or any commercial cryopreservation solutions are fine), then add cryopreservation medium to adjust to the required density (1M cells/ml);
- 4) Aliquot the cell suspension to cryovials as 1 ml/tube, close the lid tightly, and the cryovials should be labeled with the cell name, source, cell passage number, and date of cryopreservation in advance;
- 5) Place the cryovials in 4°C pre-cooled Freezing Container, then put the container in -80°C freezers;
- 6) Stay overnight, transfer the cryovials to liquid nitrogen for long-term storage.