*SUPER*Sf9 cells information

- ***SUPER*Sf9-1 (Catalogue No. 600102)**
- ***SUPER*Sf9-2 (Catalogue No. 600103)**
- ***SUPER*Sf9-3 (Catalogue No. 600104)**

Characteristics of SuperSf9 cells

The SuperSf9 cells are transgenic insect Sf9 cells that have been engineered to stably express an additional protein. The presence of this protein leads to prolonged longevity and increased recombinant protein production in baculovirus infected SuperSf9 cells compared to standard Sf9 cells. The key features to note about these cell lines are -

- Modified insect Sf9 cells stably expressing a stabilizing protein
- Use of neomycin for selection and maintenance of stable lines
- Prolonged longevity of cells after infection with baculovirus
- Up to 15-fold increase in protein yield as compared to standard Sf9 cells.
- Complementary effects to the ***flash***BAC system, but is also compatible with all other baculovirus expression vector systems.
- Expression of recombinant protein often benefits from optimisation

Growth and Maintenance of SuperSf9 cells

Shipping and Storage

Cells are shipped on dry ice and are supplied in a cryogenic vial containing $1x10^7$ cells. Cells were frozen in a freezing medium composed of 50% fresh serum free medium, 50% conditioned serum free medium and Dimethyl Sulfoxide (DMSO) to a final concentration of 10%. Store cells in liquid nitrogen (vapour phase).

Pre Shipping Quality Control

To qualify for sales cells must be in logarithmic growth with 98% viability and less than 20 passages before they are frozen.

Caution

DMSO is a hazardous material and caution has to be taken when handling this substance.

Medium Requirement

The cells can be grown in most standard media (such as baculoGROW from OET). **NOTE:** The addition of 400μg/mL neomycin should not be done until the first passage after thawing.

Establishing a new culture from the frozen ampoule

On receipt it is essential that the ampoule of frozen cells is either transferred to liquid nitrogen for storage or thawed to initiate a live cell culture. You must use aseptic technique through-out and work in a Class II Safety Hood or Tissue Culture Laminar Flow Hood. Rinse or mist the vial of cells with 70% alcohol before opening.

Required:

- Ampoule of cells provided
- Insect cell growth medium
- 125 ml cell culture shake flask (back up T25/T75 monolayer flasks)
- 1ml and 10 ml sterile pipettes
- Incubator at 27-28℃ and a shaking platform (130-1 40 rpm)
- Water bath at ~37℃ (best to use a 'temporary bath ' such as a clean beaker with warm clean water rather than a dirty water bath)

Protocol:

1. On receipt, **using aseptic technique**, defrost the cells rapidly in a water bath at 37℃ until just thawed.

2. Rinse or mist the outside of the vial with 70% alcohol and then transfer the contents of the ampoule into a 125 ml sterile shake flask containing 25 ml fresh culture medium (*baculo*GROW). Shake the cells at 130-140 rpm at 27-28℃ for 1-2 days. ***As a back-up, it is recommended to transfer 5 ml of the cells from the shake flask to a T25 monolayer flask and continue to passage.***

3. Sample the cells and determine the cell density and viability

4. When the cells have reached 2×10^6 cells/ml, they can be passaged into a fresh 30-50 ml culture (in a 100-250 ml flask) by simply diluting a portion of the culture with fresh growth medium. Continue to passage cells.

5. Cells can be used to as soon as they have recovered from shipping and are doubling as described below with a high viability (90% or more). **This may take 2-3 passages of cells.**
It is important that cells are not used until they are growing well in a log phase culture.

Cell Size and Growth Characteristics

SuperSf9 cells have an average diameter of approximately 21 µm which is larger than standard Sf9 cells. In addition, SuperSf9 cells grow more slowly than standardSf9 cells. Typical cell characteristics are described below.

- SuperSf9-1 has a cell doubling time of 37.6 hrs and an average cell size of 21.6 µm.
- Super Sf9-2 has a cell doubling time of 29.7 hrs and an average cell size of 21.3 µm.
- Super Sf9-3 has a cell doubling time of 43.6 hrs and an average cell size of 21.7 µm.

Product Use Limitation

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