Product sheet

Sf9 Cells (suspension) | 604328

General information

Description	Sf9 cells are clonal isolates derived from the Spodoptera frugiperda Sf21 cell line (IPLB-Sf-21-AE). They are commonly used in insect cell culture for recombinant protein production using baculovirus expression systems. Sf9 cells are epithelial in morphology and were cloned from the pupal ovarian tissue of the fall armyworm. One of the key characteristics of Sf9 cells is their small, regular size. They are also suitable for transfection, plaque assay/purification, amplification of high-titer stocks, and expression of recombinant proteins. The Sf9 insect cell line can be maintained in attached and suspended cultures, and do not require serum or CO2 to grow. They are considered Biosafety Level 1 and are usually grown in a 26-28 degree celsius incubator. Sf9 cells/baculovirus expression systems are widely used for high-level protein expression, often for purification, but proteins may also be functionally expressed in the defined Sf9 cell environment. The size of infected Sf9 cells is generally 17-30 microns in diameter. The Sf9 cell line is distinct from the Sf21 cell line in that it is a clonal isolate with a smaller and more regular size, while Sf21 cells are more disparate in size and form monolayers and plaques that are more irregular. Some Sf9 cell lines may harbor a negative sense Rhabdovirus called Spodoptera frugiperda rhabdovirus (SfRV), although not all tested Sf9 cells appear to be infected with this virus. The genome size of Sf9 has been estimated to be 451 Mbp with a G+C content of 36.53%.
Organism	Fall armyworm
Tissue	Ovary
Applications	Transfection, plaque assay/purification, amplification of high-titer stocks, and expression of recombinant proteins
Synonyms	SF9, sf9, SF-9, Sf-9, sf-9, Sf 9, Spodoptera frugiperda clone 9, Sf clone 9, IPLB-Sf-9AE, IPLB-SF-9AE, IPLB-SF-9, IPLB-Sf-9, IPLB-Sf9

Characteristics

Age	Pupal stage
Gender	Female
Morphology	Round, attached, epitheloid
Growth properties	Suspension

Regulatory Data

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Citation	Sf9 (Cytion catalog number 604328)
Biosafety level	1
NCBI_TaxID	7108
CellosaurusAccession	CVCL_0549

Biomolecular Data

Virus susceptibility	Baculoviruses, Autographa californica (MNPV), St. Louis encephalitis (SLE)

Handling

Culture Medium	Sf-900™ III SFM (Thermofisher, Cat-No. 12658019)
Supplements	Supplement the medium with 0% FBS to enhance proliferation if needed
Dissociation Reagent	Accutase
Subculturing	Seeding after thawing 5x10^5/ml. Incubate at 27°C-28°C, without CO_2, on a shaker with agitation of 90-110 rpm in Erlenmeyerflask. Keep at a cell density of 3-8x10^5/ml. Maximum cell density possible is 1-4x10^6 cells/ml.
Seeding density	1 x 10^4 cells/cm^2. Incubate between 26 to 30 degree Celsius in a non-humidified, ambient air-regulated incubator. Use cell culture flasks with filter caps or loosen caps to allow for oxygen exchange.
Fluid renewal	2 to 3 times per week
Freeze medium	As a cryopreservation medium, we use complete cell culture medium (including FBS) + 10% DMSO for adequate post-thaw viability.

Thawing and Culturing Cells	1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required. 3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains. 4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening. 5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently. 6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. 7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth. 8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.
Incubation Atmosphere	27°C, 0% CO_2, humidified atmosphere.
Shipping Conditions	Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.
Storage Conditions	For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Quality Control & Molecular Analysis

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Sterility	Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods. To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.