NSO

400109

GENERAL INFORMATION

Description

NS0 is a murine myeloma cell line derived from a non-secreting variant of a mouse plasmacytoma. It is widely used in biotechnology and pharmaceutical manufacturing for the production of recombinant monoclonal antibodies and other therapeutic proteins. NS0 cells are adapted for suspension culture and can grow in serum-free, chemically defined media, making them well-suited for large-scale bioprocessing under current good manufacturing practice (cGMP) conditions. They are known for their high transfection efficiency and ability to achieve high protein expression yields, particularly when used in conjunction with strong mammalian expression vectors and amplification systems such as those based on methotrexate (MTX) selection.
Despite their utility in protein production, NS0 cells are of murine origin, which introduces some limitations, including the presence of non-human glycosylation patterns on expressed proteins. These differences can influence immunogenicity and pharmacokinetics, which is a consideration in clinical applications. Nonetheless, NS0-derived products have received regulatory approval and are in clinical use, underscoring the line's robustness and scalability. NS0 cells are non-tumorigenic and lack endogenous immunoglobulin expression, reducing the risk of contaminating native antibody sequences in recombinant antibody production workflows.

Tissue	Plasma cell myeloma, hybridoma fusion partner
Disease	Mouse multiple myeloma

Synonyms

- NSO
- NS/0
- NS/O
- NS-0
- P3-NS0
- P3/NS0
- P3/NSO

CLASSIFICATION

Organism	Mouse
Sex	Female
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Cell type	Lymphoblastoid

IDENTIFIERS

Citation

NSO (Cytion catalog number 400109)

NCBI TaxID	10090
Cellosaurus	CVCL_3940

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HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

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.

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.

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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