Product sheet

NS0 cells | 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.
Organism	Mouse
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

Characteristics

Gender	Female
Cell type	Lymphoblastoid
Growth properties	Suspension

Regulatory Data

Citation	NSO (Cytion catalog number 400109)
Biosafety level	1
NCBI_TaxID	10090

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CellosaurusAccession	CVCL_3940

Biomolecular Data

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS
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.

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	37°C, 5% 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

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.