Product sheet

KHOS-240S Cells | 300433

General information

Description	KHOS-240S is an osteosarcoma cell line that is derived from human bone sarcoma tissue. This cell line, along with its variants, has been extensively used in research focused on osteosarcoma, a primary malignant bone tumor that predominantly affects children and young adults. Osteosarcoma is characterized by the production of immature bone (osteoid) by malignant cells and is notorious for its aggressive behavior and potential for early metastasis, particularly to the lungs. The KHOS-240S cell line is resistant to several kinase inhibitors, including those targeting the PI3K-Akt-mTOR pathway. This resistance to common therapeutic targets makes KHOS-240S particularly valuable for studying the mechanisms of drug resistance in osteosarcoma and exploring alternative therapeutic strategies. Researchers have used this cell line to screen a variety of oncology drugs and investigational agents, which has led to the identification of compounds that could potentially overcome resistance mechanisms. The expression profile of genes associated with drug resistance and osteosarcoma biology, such as those involved in the mTOR signaling pathway, is of particular interest in studies utilizing KHOS-240S. Moreover, KHOS-240S has been utilized in the exploration of microRNA expression patterns, which may correlate with drug sensitivity or resistance. This cell line's specific resistance to PI3K-Akt-mTOR pathway inhibitors provides an essential model for understanding how osteosarcomas may evade targeted therapies and offers a basis for the development of novel therapeutic approaches that could enhance treatment efficacy in resistant osteosarcoma subtypes.
Organism	Human
Tissue	Bone
Disease	Osteosarcoma
Synonyms	KHOS240S

Characteristics

Age	13 years
Gender	Female
Ethnicity	Caucasian
Morphology	Fibroblast-like
Growth properties	Monolayer, adherent

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Regulatory Data

Citation	KHOS-240S (Cytion catalog number 300433)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_2544

Biomolecular Data

Tumorigenic	No

Handling

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Accutase
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Seeding density	1×10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 5×10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.
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.

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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

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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.