

KHOS-312H Cells | 300447

Description

KHOS-312H is a human osteosarcoma cell line derived from bone cancer. This cell line is part of a group of KHOS-derived osteosarcoma models, which includes KHOSNP and KHOS-240S, among others. Like other osteosarcoma cell lines, KHOS-312H is used extensively in cancer research to study the biology of osteosarcomas, particularly their genetic and molecular characteristics, and to evaluate potential therapeutic agents. The KHOS-312H cell line is known for its resistance to certain targeted kinase inhibitors, such as those affecting the PI3K-Akt-mTOR pathway, making it an essential model for studying drug resistance mechanisms in osteosarcoma.

One of the significant features of the KHOS-312H cell line is its utility in high-throughput screening for anticancer drugs. In large-scale screening studies, KHOS-312H has been tested against a wide array of compounds, including both FDA-approved drugs and investigational agents. These studies have revealed that KHOS-312H shows varying degrees of sensitivity and resistance to different classes of anticancer drugs, helping researchers to map the molecular landscape of osteosarcoma response to treatment. Notably, the cell line's resistance to mTOR inhibitors has been particularly highlighted, suggesting a potential need for combination therapies or novel agents to overcome this challenge.

Organism Human

Tissue Bone

Disease Osteosarcoma

Synonyms KHOS-321H, KHOS312H, KHOS321H

Age 13 years

Gender Female

Ethnicity Caucasian

Morphology Fibroblast-like

Growth properties Monolayer, adherent

Citation KHOS-312H (Cytion catalog number 300447)

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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 $300 \times g$ 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.

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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.