Product sheet

KHYG-1 Cells | 305890

Informações gerais

Description	KHYG-1 is a human natural killer (NK) cell leukemia cell line established from the peripheral blood of an adult female patient diagnosed with aggressive NK-cell leukemia. The cell line was derived at initial diagnosis and represents an Epstein-Barr virus (EBV)-negative NK-cell malignancy, distinguishing it from many NK/T-cell lymphoma models that are EBV-associated. KHYG-1 cells grow in suspension and display the cytomorphologic and immunophenotypic characteristics of activated NK cells, including expression of CD56 and cytoplasmic CD3ε, while lacking surface CD3 and T-cell receptor gene rearrangements, consistent with true NK-cell lineage derivation. Molecular profiling studies have included KHYG-1 in genomic and transcriptomic analyses of NK-cell malignancies. Array comparative genomic hybridization and gene expression studies across NK-cell lines have identified recurrent chromosomal abnormalities in NK-cell tumors, such as deletions involving 6q21 and alterations affecting tumor suppressor pathways. In contrast to several EBV-positive NK-cell lines, KHYG-1 does not harbor detectable ATR gene alterations in analyses of the full coding region, underscoring molecular heterogeneity within NK-cell neoplasms. Gene expression profiling places KHYG-1 within the NK-cell lineage cluster, characterized by expression of NK-associated receptors and cytotoxic effector molecules, and distinct from cytotoxic αβ and γδ T-cell lymphomas. Functionally, KHYG-1 exhibits interleukin-2-dependent proliferation in vitro and retains cytotoxic activity typical of NK cells. The line has been widely used to investigate signaling pathways critical to NK-cell survival and proliferation, including aurora kinase A and NOTCH pathway components, as well as to evaluate candidate therapeutic inhibitors targeting NK-cell malignancies. As an EBV-negative model of aggressive NK-cell leukemia, KHYG-1 provides a valuable in vitro system for studying intrinsic oncogenic mechanisms in NK-cell transformation, independent of viral-driven lymphomagenesis.
Organism	Human
Tissue	Peripheral blood
Disease	Natural killer cell lymphoblastic leukemia/lymphoma
Synonyms	KHYG1, KHYG

Características

Age	45 years
Gender	Female
Ethnicity	Japanese
Morphology	lymphocyte-like

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Growth properties	Floating aggregates Cluster

Dados regulatórios

Citation	KHYG-1 (Cytion catalog number 305890)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_2976

Dados biomoleculares

Mutational profile	Mutation: p.Gly12Ala, Unspecified; Mutation: p.Arg248Trp, Unspecified

Manuseio

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% heat-inactivated FBS and 10 ng/ml IL-2
Dissociation Reagent	None
Doubling time	24-48 hours ; ~30-40 hours ; ~54 hours , ~30 hours , ~25 hours
Split ratio	Split 1/4 every 3-4 days.
Fluid renewal	Simple dilution because of suspension cell culture. Subculture every 3-4 days with split ratio = 1/4.
Freeze medium	As a cryopreservation medium, we use complete growth medium + 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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium. 7. Follow the procedure described under Post-Thaw Recovery
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.

Controle de Qualidade e Análise Molecular