

Jurkat | 302147

General information

Description

Jurkat, a T cell leukemia cell line, is derived from a 14-year-old male patient with T-cell acute lymphoblastic leukemia (T-ALL). Jurkat cells are characterized by their high proliferation rate and are commonly used in immunology research. Jurkat cells are CD4+ and CD8- (CD4/CD8 ratio > 10). Jurkat cells are also CD45RO+ and CD45RA-. Jurkat cells are derived from a patient with T-ALL, and are characterized by their high proliferation rate and are commonly used in immunology research. Jurkat cells are CD4+ and CD8- (CD4/CD8 ratio > 10). Jurkat cells are also CD45RO+ and CD45RA-. Jurkat cells are derived from a patient with T-ALL, and are characterized by their high proliferation rate and are commonly used in immunology research.

Organism Human

Tissue T cell

Disease T-cell acute lymphoblastic leukemia

Metastatic site T cell

Applications Jurkat cells are commonly used in immunology research, including studies on T cell activation, signaling, and gene expression.

Synonyms JURKAT, JM, JM-Jurkat, Jurkat-FHCRC, Jurkat FHCRC, FHCRC-11, FHCRC subclone 11, FCCH1024

Characteristics

Age 14 years

Gender Male

Ethnicity Caucasian

Morphology Lymphoblastoid

Growth properties Adherent

Media and supplements

Citation Jurkat (ATCC CCL-21) | Cytion 302147

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Biosafety level 1

NCBI_TaxID 9606

CellosaurusAccession CVCL_0065

Characteristics

Antigen expression

Jurkat expresses TCR (α and β T) CD3. It also expresses CD4 CD8, and T cell markers.

Mutational profile

Jurkat has a high frequency of mutations in the TCR, C1GALT1C1 O-linked, and O-glycans [1].
D. R., & Su, A. I. (2018). Genomic profiles of Jurkat. BMC genomics, 19, 1-13.

Karyotype

Jurkat has a karyotype of 46, XY, -7.8%.

Media

Culture Medium

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

Supplements

10% FBS

Doubling time

26 hours

Subculturing

1:5

Fluid renewal

2-3 times

Freeze medium

10% FBS + 10% DMSO

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Thawing and Culturing Cells

1. Thaw the cells rapidly in a water bath at 37°C. Transfer the cells to a pre-warmed medium.
2. Centrifuge the cells at 300 x g for 5 minutes. Resuspend the cells in pre-warmed medium.
3. Seed the cells into a pre-warmed medium in a 15 mL flask at a density of 1.5 x 10⁶ cells/mL.
4. Incubate the cells at 37°C with 5% CO₂ in a humidified atmosphere.
5. Monitor the cell growth and morphology. Harvest cells when they reach 70% confluency.
6. Wash the cells with PBS and resuspend in a fresh medium.
7. Seed the cells into a 10 mL flask at a density of 1.0 x 10⁶ cells/mL.
8. Continue to culture the cells under the same conditions.

Incubation Atmosphere 37°C, 5% CO₂, humidified

Flask Coating No

Freezing Procedure Freeze cells in a freezing medium and store at -80°C.

Shipping Conditions Ship cells at -80°C.

Storage Conditions Store cells at -150°C for up to 196 days.

HLA

Sterility

The cells are free of mycoplasmas and PCR detectable agents.

The cells are free of endotoxins, mycoplasmas, and other contaminants.