Product sheet

HK/FDC Cells | 300204

General information

Description	**Immortalized versions of these HK/FDC-like cells are now also available, offering a more stable and scalable tool for long-term studies of FDC function and B cell interactions.** Follicular dendritic cell (FDC)-like cell lines (HK cells) from human tonsils were established to investigate the role of FDC in germinal centers of lymphoid follicles. Initially, HK cells expressed markers like CD21, CD23, DRC-1, CD40, VCAM-1, ICAM-1, and HJ2, but lost DRC-1, CD21, and CD23 within three days of culture. Morphologically and functionally, HK cells are distinct from fibroblasts and have unique growth requirements. They bind to B cells, supporting their proliferation, but not to T cells. Activated T cells, stimulated with anti-CD3 antibodies, bind to HK cells, inducing phenotypic changes and promoting their growth. HK cells preferentially bind and stimulate germinal center (GC) B cells, rescuing them from apoptosis. They enhance B cell proliferation in the presence of anti-mu or anti-CD40. These cells also produce soluble factors that contribute to their costimulatory activity. Phenotypic and functional analyses suggest that HK cells may be derived from FDCs, highlighting their potential role in supporting GC B cell maturation and differentiation.
Organism	Human
Tissue	Oral cavity, tonsil
Disease	Non-neoplastic follicular dendritic cell line
Applications	Feeder cell for growth of normal B lymphocytes and lymphomas/leukemias. Studies on B cell development in germinal centers of lymph nodes. Possibly research on virus infection of FDCs
Synonyms	FDC/HK

Characteristics

Age	Child
Gender	Unspecified
Ethnicity	Caucasian
Morphology	Fibroidal
Cell type	Follicular dendritic cell
Growth properties	Adherent

HK/FDC Cells | 300204

Regulatory Data

Citation	HK/FDC (Cytion catalog number 300204)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_IY38
GMO Status	No genetic modification; wildtype immortalized cell line

Biomolecular Data

Surface antigens	CD14+, CD40+, ICAM-1+, VCAM-1+

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
Doubling time	approx. 24-36 hours
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.
Split ratio	1 to 3
Seeding density	1 to 3 x 10^4 cells/cm^2
Fluid renewal	1 to 2 times per week

HK/FDC Cells | 300204

Post-Thaw Recovery	After thawing, plate the cells at 5 x 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.
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.