Product sheet

Alab Cells | 300280

General information

Description	The ALAB cell line is a human mammary adenocarcinoma cell line derived from a mammary tumor. It has been adapted to grow in vitro, particularly on collagen substrates, which facilitates the study of tumor cell behavior in mammary carcinomas. ALAB cells are notably used in research focused on calcium-binding and collagen-binding proteins (CaBP and CBP, respectively). In these cells, the calcium-binding proteins were isolated and analyzed, revealing a significant 38 kDa protein, which is closely associated with annexins, a family of proteins involved in cellular processes such as membrane trafficking and signal transduction. One of the key proteins identified in ALAB cells is annexin II, a calcium-dependent protein that binds to collagen and plays a role in various cellular functions, including exocytosis and cytoskeletal organization. Immunofluorescence studies of ALAB cells reveal a perinuclear granular pattern of annexin II expression, indicating its involvement in protein secretion and cellular differentiation. The 38 kDa annexin II protein detected in these cells is also associated with collagen-binding properties, which can be crucial for tumor progression and metastasis, making ALAB a valuable model for studying mammary tumor biology and protein interactions.
Organism	Human
Tissue	Breast
Disease	Adenocarcinoma
Metastatic site	Primary tumor site (breast)
Applications	Breast adenocarcinoma research; annexin II and calcium-binding protein biology; collagen-binding studies; tumor cell invasion and ECM interactions; protein secretion; exocytosis; mammary carcinoma biology
Synonyms	AlAb, ALAB, A1Ab, AIAB

Characteristics

Age	54 years
Gender	Male
Ethnicity	Ethnicity not specified
Morphology	Epithelial-like
Cell type	Epithelial cells

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Growth properties	Adherent

Regulatory Data

Citation	Alab (Cytion catalog number 300280)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_U957
GMO Status	No genetic modification; wildtype human breast adenocarcinoma cell line

Biomolecular Data

Handling

Culture Medium	DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)
Supplements	Supplement the medium with 5% FBS
Dissociation Reagent	Accutase
Subculturing	Gather the suspension cells in a 15 ml tube and gently wash the adherent cells with PBS lacking calcium and magnesium (use 3-5 ml for T25 flasks and 5-10 ml for T75 flasks). Apply Accutase (1-2 ml for T25 flasks, 2.5 ml for T75 flasks) ensuring full coverage of the cell layer. Allow the cells to incubate at room temperature for 10 minutes. Following incubation, combine and centrifuge both the suspension and adherent cells. After centrifugation, carefully resuspend the cell pellet and transfer the cell suspension into new flasks containing fresh medium.
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.