

EA.hy926 | 305034

General information

Description

EA.hy926 Cells: A Powerful Tool for Cardiovascular Disease Research EA.hy926 cells, or CRL-2922, are a remarkable somatic hybrid cell line widely used in cardiovascular disease research. Developed by CS Edgell and deposited by Bioz Stars, these cells possess unique characteristics that make them invaluable for studying various aspects of endothelial cell functions related to angiogenesis, homeostasis/thrombosis, blood pressure regulation, and inflammation. The cytoplasmic distribution of Weibel-Palade bodies and tissue-specific organelles in EA.hy926 cells, as observed through electron photomicrographs, reflects their differentiated endothelial cell functions. One of the critical advantages of EA.hy926 cells is their ability to undergo more than 100 population doublings (PDLs) while maintaining their cellular properties. This longevity ensures a sustainable and consistent cell source for long-term experiments and investigations. With a doubling time of 12 hours, these cells exhibit rapid proliferation, facilitating experimental workflows and enabling efficient generation of cell quantities required for large-scale studies. EA.hy926 cells have proven to be a game-changer in cardiovascular research, particularly in the purification of endothelin converting enzyme (ECE). Traditionally, obtaining primary endothelial cells in significant quantities has been challenging, hindering the sanctification of ECE. However, EA.hy926 cells, derived from transformed human umbilical vein endothelial cells, have emerged as a reliable alternative for studying ECE activity. This breakthrough has opened up new possibilities for investigating the roles of ECE in cardiovascular diseases and developing potential therapeutic interventions. EA.hy926 cells offer an exceptional tool for researchers in the field of cardiovascular science. Their longevity, rapid proliferation, and ability to mimic differentiated endothelial cell functions make them valuable resource for investigating various aspects of cardiovascular diseases. Whether it's studying angiogenesis, homeostasis/thrombosis, blood pressure regulation, inflammation, or exploring the role of ECE, these cells provide researchers with an indispensable platform for advancing our understanding of cardiovascular health and developing innovative treatments.

Organism

Human

Tissue

Umbilical vein, vascular endothelium

Synonyms

EA. hy 926, EA hy 926, EA-hy926, EAhy 926, EAHY-926, EA.Hy926, EA.hy926, EAhy926, EaHy926, Eahy926

Characteristics

Gender

Male

Morphology

Endothelial

Growth properties

Adherent

Identifiers / Biosafety / Citation

Citation

EA.hy926 (Cytion catalog number 305034)

Biosafety level 1

Expression / Mutation

Handling

Culture Medium DMEM

Medium supplements 10% FBS, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO₃, w: 1.0 mM Sodium pyruvate

Passaging solution Accutase

Doubling time 12 hours

Subculturing Remove medium and rinse the adherent cells using PBS without calcium and magnesium (3-5 ml PBS for T25, 5-10 ml for T75 cell culture flasks). Add Accutase (1-2 ml per T25, 2.5 ml per T75 cell culture flask), the cell sheet must be covered completely. Incubate at ambient temperature for 8-10 minutes. Carefully resuspend the cells with medium (10 ml), centrifuge for 3 min at 300 g, resuspend cells in fresh medium and dispense into new flasks which contain fresh medium.

Split ratio 1:2 to 1:4

Fluid renewal 2 to 3 times per week

Freeze medium CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures The cells come deep-frozen shipped on dry ice. Please make sure that the vial is still frozen. If immediate culturing is not intended, the cryovial must be stored below -150 degree Celsius after arrival. If immediate culturing is intended, please follow the below instructions: Quickly thaw by rapid agitation in a 37 degree Celsius water bath within 40-60 seconds. The water bath should have clean water containing an antimicrobial agent. As soon as the sample has thawed, remove the cryovial from the water bath. A small ice clump should still remain and the vial should still be cold. From now on, all operations should be carried out under aseptic conditions. Transfer the cryovial to a sterile flow cabinet and wipe with 70% alcohol. Carefully open the vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of culture medium (room temperature). Resuspend the cells carefully. Centrifuge at 300 x g for 3 min and discard the supernatant. The centrifugation step may be omitted, but in this case the remains of the freeze medium have to be removed 24 hours later. Resuspend the cells carefully in 10 ml fresh cell culture medium and transfer them into two T25 cell culture flasks. All further steps are described in the subculture section.

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**Handling of
proliferating
cultures**

One or two cell culture flasks come filled with cell culture medium. Collect the entire medium in 1 or 2 x 50 ml centrifuge tubes, respectively. Carefully add 5 ml of cell culture medium to each T25 cell culture flask. Control the cell morphology and confluency under the microscope. Incubate at 37 degree Celsius for a minimum of 24 hours. Spin down the collected medium at 300 x g for 3 minutes to collect the cells which may have detached during transit. If a cell pellet is visible, resuspend the cells in 5 ml of cell culture medium and transfer to a T25 cell culture flask. Incubate at 37 degree Celsius for a minimum of 24 hours.

Quality control / Genetic profile / HLA

Sterility

Mycoplasma contaminations are ruled out through PCR-based and luminescence-based mycoplasma assays. The absence of bacterial, fungal or yeast contamination is controlled through daily visual cell monitoring.

STR profile

Amelogenin: x
CSF1PO: 10,11,12
D13S317: 11
D16S539: 11,12
D5S818: 11
D7S820: 8,9,10
TH01: 6,8,9,3
TPOX: 8,9
vWA: 14,17
D3S1358: 15,16
D21S11: 28,29,32
D18S51: 13,15,17
Penta E: 7,11,12
Penta D: 9,11
D8S1179: 13
FGA: 22,23
D6S1043: 11,12,22
D2S1338: 22,24
D12S391: 15,18
D19S433: 13,14