Product sheet

AB2.2 Cells | 305738

Renseignements généraux

Description	The AB2.2 cell line is a widely utilized murine embryonic stem (ES) cell line derived from the 129S7 (also known as 129P2/OlaHsd) mouse strain. It has played a prominent role in gene targeting and transgenic mouse generation due to its robust capacity for in vitro expansion and genetic manipulation. AB2.2 cells are pluripotent, capable of contributing to all germ layers, and have been instrumental in producing germline-competent chimeras. However, like many ES cell lines maintained over extended culture periods, AB2.2 is prone to chromosomal instability, especially aneuploidy involving chromosome 8. Cytogenetic analysis of AB2.2 and its sub-lines has revealed a high frequency of chromosomal abnormalities, with mosaic and pure trisomy 8 being particularly common. In one study, AB2.2 displayed a mosaic karyotype involving gains of chromosomes 8 and Y, including configurations such as 42,XY,+Y,+8 / 41,XY,+Y / 40,XY. Among its sub-lines, additional karyotypic anomalies were identified, such as double trisomies involving chromosomes 8 and 11, and complex derivative chromosomes arising from unbalanced translocations involving chromosome 8. These structural and numerical aberrations are associated with decreased germline transmission efficiency, and their presence complicates interpretation of genotype-phenotype relationships in chimeric animals. Given its genetic background and susceptibility to chromosomal instability, AB2.2 remains a powerful tool in mouse genetics, but it requires careful quality control. Routine karyotype screening-including both G-banding and FISH-is recommended before proceeding with blastocyst injection to ensure the chromosomal integrity necessary for reliable germline transmission and accurate phenotypic analyses.
Organism	Mouse
Tissue	Blastocyst
Applications	Stem cell research

Caractéristiques

Age	Embryo
Gender	Male
Cell type	Embryonic stem cell
Growth properties	Adherent

Données réglementaires

Citation	AB2.2 (Cytion catalog number 305738)

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Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_C261

Données biomoléculaires

Mutational profile	

Manipulation

Seeding density	3 to 5 x 10^4 cells/ cm2
Fluid renewal	2 to 3 times per week
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.

Contrôle de la qualité et analyse moléculaire

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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.