AGS

300408

GENERAL INFORMATION

Description

AGS cells are a human gastric adenocarcinoma cell line derived from the stomach tissue of a 54-year-old Caucasian female. They are extensively used in biomedical research focused on gastric cancer, including studies on cancer cell biology, pathogenesis, and drug testing. The AGS cell line exhibits epithelial-like morphology and is characterized by its aggressive growth pattern and tumorigenic potential in vivo. These cells are commonly used as a model to study the molecular and cellular mechanisms underlying gastric carcinogenesis, including the influence of Helicobacter pylori infection, a well-known risk factor for gastric cancer. AGS cells provide a robust system to explore the interactions between gastric cancer cells and H. pylori, especially regarding how bacterial factors affect cancer cell proliferation, apoptosis, and inflammatory responses.

AGS cells are also valuable for examining the gastric epithelial barrier's response to various stimuli, including inflammatory cytokines, and for studying signaling pathways implicated in gastric cancer, such as those involving NF-kB, Wnt, and MAPK. Their utility extends to the assessment of new therapeutic agents, where they are used to evaluate the efficacy and mechanisms of action of anticancer drugs, targeted therapies, and natural compounds with potential anti-cancer properties.

Furthermore, AGS cells are often employed in studies aimed at understanding the genetic and epigenetic alterations in gastric cancer, offering insights into potential diagnostic markers and therapeutic targets for this challenging and frequently fatal disease.

Tissue	Gastric
Disease	Adenocarcinoma

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	2

CHARACTERISTICS

Morphology	Epithelial-like
Tumourigenic	Yes, in athymic BALB/c mice

Karyotype

Modal number = 47, range = 39 to 92

Doubling time	24 to 48 hours

IDENTIFIERS

Citation

AGS (Cytion catalog number 300408)

NCBI TaxID	9606
Cellosaurus	CVCL_0139

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EXPRESSION AND SUSCEPTIBILITY

Protein expression

P53 positive

Viruses

This cell line may release Parainfluenzavirus Type 5 (formerly known as Simian Virus 5). The virus interferes with Interferon-signalling within the cell line by degradation of STAT1.

HANDLING AND CULTURE

Culture medium

DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase

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.

Seeding density	1 x 10^4 cells/cm^2 will result in a confluent monolayer within 3to5 days.
Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	54 years
Ethnicity	Caucasian

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes