Product sheet

KMS-12-PE Cells | 300286

General information

Description	The KMS-12-PE cell line, established from the pleural effusion of the same patient, differs significantly from KMS-12-BM in several aspects. KMS-12-PE cells represent a more terminally differentiated plasma cell stage, as indicated by the absence of CD20 but continued expression of CD38 and PCA-1. A striking feature of KMS-12-PE is its ability to ectopically produce and secrete a salivary type of amylase, both in the patient's pleural effusion and in culture, making it unique among human myeloma cell lines. This phenomenon is associated with a chromosomal deletion near the region where the amylase gene is located, specifically del(1)(p22→pter), observed in a significant proportion of KMS-12-PE cells. Despite these distinct differences, both KMS-12-PE and KMS-12-BM share the same clonal marker, the translocation t(11;14)(q13;q32), which is common in myeloma cases. However, KMS-12-PE cells show fewer chromosomal abnormalities than KMS-12-BM and tend to be hypodiploid. Like KMS-12-BM, KMS-12-PE does not produce immunoglobulins, either in surface or secretory form, even though the cells have well-developed endoplasmic reticulum. The lack of tumorigenicity in both cell lines, despite their aggressive in vitro growth, and their stable long-term proliferation in serum-free medium make them valuable tools for studying myeloma biology, particularly in the context of non-Ig-producing myeloma.
Organism	Human
Tissue	Pleural effusion
Disease	Multiple Myeloma
Synonyms	KMS 12 PE, KMS-12_PE, KMS-12PE, KMS12-PE, KMS12PE, Kawasaki Medical School-12-Pleural Effusion

Characteristics

Age	64 years
Gender	Female
Ethnicity	Japanese
Morphology	Round cells
Cell type	B cell
Growth properties	Suspension, single cells and small clusters

Regulatory Data

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Citation	KMS-12-PE (Cytion catalog number 300286)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1333

Biomolecular Data

Surface antigens	CD3 -, CD4 -, CD13 -, CD14 -, CD15 -, CD19 -, CD20 -, CD34 -, CD38 +, CD138 +, HLA-DR +, PCA-1 +
Tumorigenic	Not tumorigenic in nude mice
Products	No immunoglobulin production
Mutational profile	Translocation: t(11;14)(q13;q32)

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS
Subculturing	Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 5 x 10^5 cells/ml and keep the cell concentration within the range of 3 x 10^5 to 1 x 10^6 cells/ml for optimal growth.
Seeding density	5 x 10^5 cells/ml
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.