# KMS-12-PE

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.

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| **Tissue** | Pleural effusion |
| **Disease** | Multiple Myeloma |

### Synonyms

- KMS 12 PE
- KMS-12_PE
- KMS-12PE
- KMS12-PE
- KMS12PE
- Kawasaki Medical School-12-Pleural Effusion

## CLASSIFICATION

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| **Organism** | Human |
| **Sex** | Female |
| **Growth properties** | Suspension |
| **Biosafety level** | 1 |

## CHARACTERISTICS

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| **Morphology** | Round cells |
| **Cell type** | B cell |
| **Tumourigenic** | Not tumorigenic in nude mice |

## IDENTIFIERS

### Citation

KMS-12-PE (Cytion catalog number 300286)

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| **NCBI TaxID** | 9606 |
| **Cellosaurus** | CVCL_1333 |

## EXPRESSION AND SUSCEPTIBILITY

### Surface antigens

CD3 -, CD4 -, CD13 -, CD14 -, CD15 -, CD19 -, CD20 -, CD34 -, CD38 +, CD138 +, HLA-DR +, PCA-1 +

### Mutational profile

Translocation: t(11;14)(q13;q32)

### Products

No immunoglobulin production

## HANDLING AND CULTURE

### Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

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| **Incubation atmosphere** | 37°C, 5% $CO_2$, humidified atmosphere. |

### 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.

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| **Seeding density** | 5 x $10^5$ cells/ml |

### 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.

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| **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

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| **Donor age** | 64 years |
| **Ethnicity** | Japanese |

## 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.

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| **Material Transfer Agreement required** | Yes |