**Product sheet**

# KMS-12-BM Cells | 300287

## General information

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| **Description** | The KMS-12-BM cell line is a human myeloma cell line established from the bone marrow of a patient with non-producing multiple myeloma. This cell line represents an immature plasmacytoid stage of B-cell differentiation, characterized by the expression of surface markers CD20, CD38, and PCA-1, but a lack of immunoglobulin production. The cells are notable for their distorted morphology, with many showing multinuclear and giant characteristics. Ultrastructurally, KMS-12-BM cells possess well-developed rough endoplasmic reticulum and ovoid eccentric nuclei with peripheral chromatin distribution, typical of plasmacytoid cells.<br><br>KMS-12-BM cells exhibit a chromosomal abnormality, particularly a reciprocal translocation t(11;14)(q13;q32), which is often associated with multiple myeloma. These cells also display a broad range of chromosomal numbers, from hypodiploid to polyploid, indicating significant genomic instability. Unlike its counterpart KMS-12-PE, the KMS-12-BM line does not produce amylase, and it lacks immunoglobulin secretion or surface expression, making it suitable for studies involving immunoglobulin-nonproducing myeloma. Additionally, it shows low cloning efficiency in soft agar culture conditions, with less than 0.1% colony formation, and has no tumorigenic properties when injected into nude mice. |
| **Organism** | Human |
| **Tissue** | Bone marrow |
| **Disease** | Multiple Myeloma |
| **Synonyms** | KMS 12 BM, KMS-12BM, KMS12-BM, KMS12BM, KMS-12, KMS12, Kawasaki Medical School-12-Bone Marrow |

## Characteristics

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| **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-BM (Cytion catalog number 300287) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_1334 |

## Biomolecular Data

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| **Surface antigens** | CD3 -, CD10 -, CD13 -, CD19 -, CD20 +, CD34 -, CD37 +, CD38 +, cyCD79a +, CD80 -, CD138 +, HLA-DR -, PCA-1 +, sm/cyIgG -, sm/cyIgM -, sm/cykappa -, sm/cylambda - |
| **Tumorigenic** | Not tumorigenic in nude mice |
| **Products** | No immunoglobulin production |
| **Mutational profile** | Translocation: t(11;14)(q13;q32) |

## Handling

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| **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. |

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| **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.<br>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.<br>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.<br>4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.<br>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.<br>6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.<br>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.<br>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

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| **Sterility** | Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.<br><br>To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections. |