**Product sheet**

# K7M2 wt-Luc Cells | 305684

## General information

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| **Description** | K7M2 wt-Luc is a bioluminescent derivative of the murine K7M2 osteosarcoma cell line, engineered to stably express a firefly luciferase reporter gene. The parental K7M2 cell line was established from ascites of a spontaneous osteosarcoma in a BALB/c mouse and is characterized by osteoblastic morphology and high metastatic potential, particularly to the lungs. K7M2 is one of the few syngeneic osteosarcoma models available in the BALB/c background, making it a valuable tool for studying osteosarcoma biology, tumor-immune interactions, and the evaluation of immunotherapy strategies in an immunocompetent host.<br><br>The stable luciferase integration in K7M2 wt-Luc enables sensitive, noninvasive bioluminescence imaging (BLI) of primary tumor growth and pulmonary metastatic spread in syngeneic BALB/c mice. Following administration of the luciferin substrate, the emitted signal correlates with viable tumor cell number, supporting longitudinal monitoring of tumor engraftment, metastatic colonization, and therapeutic response without invasive procedures at each time point. This makes K7M2 wt-Luc particularly suited for preclinical studies evaluating anti-tumor and anti-metastatic agents, checkpoint inhibitors, and combination treatment strategies in osteosarcoma.<br><br>K7M2 wt-Luc retains the biological and immunological properties of the parental K7M2 line, including expression of complement component C3 and Fc gamma receptor I (FcgRI), features that may influence interactions with the innate immune compartment. The luciferase reporter substantially enhances experimental flexibility and sensitivity for real-time tracking of tumor progression. Researchers should validate luciferase activity, growth kinetics, and metastatic behavior under their specific experimental conditions prior to large-scale in vivo use. |
| **Organism** | Mouse |
| **Tissue** | Ascites |
| **Disease** | Mouse osteosarcoma |
| **Metastatic site** | Lung |
| **Applications** | Osteosarcoma research; syngeneic BALB/c tumor model; pulmonary metastasis imaging via bioluminescence; anti-tumor and anti-metastatic drug evaluation; checkpoint inhibitor testing; innate immune interaction studies (C3, FcgRI); pediatric bone cancer immunotherapy |
| **Synonyms** | K7M2-WT, K7M2 |

## Characteristics

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| **Breed/Subspecies** | BALB/c |
| **Age** | 895 days |

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| **Gender** | Female |
| **Cell type** | Osteoblast |
| **Growth properties** | Adherent |

## Regulatory Data

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| **Citation** | K7M2 wt-Luc (Cytion catalog number 305684) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 10090 |
| **CellosaurusAccession** | Not assigned (K7M2 wt-Luc reporter derivative; parental K7M2 syngeneic BALB/c osteosarcoma) |
| **GMO Status** | GMO-S1: This cell line contains a stably integrated firefly luciferase reporter cassette (Luc2, codon-optimized) introduced via replication-incompetent lentiviral transduction. The resulting polyclonal cell population was maintained under puromycin selection (1–5 µg/mL). S1 containment is required. This classification applies only within Germany and may differ elsewhere. |

## Biomolecular Data

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| **Receptors expressed** | Complement(C3), expressed, Fc receptor, IgG, high affinity I(Fcgr1), expressed |
| **Antigen expression** | Luc2 (firefly, codon-optimized) |
| **Tumorigenic** | Yes |

## Handling

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| **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) |
| **Supplements** | Supplement the medium with 10% FBS |
| **Dissociation Reagent** | Accutase |

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| **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. |
| **Split ratio** | 1 to 3 |
| **Seeding density** | 1-3*10^4/cm² |
| **Fluid renewal** | 2 to 3 times per week |
| **Freeze medium** | As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability. |
| **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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.<br>7. Follow the procedure described under Post-Thaw Recovery |
| **Incubation Atmosphere** | 37°C, 5% $CO_2$, humidified atmosphere. |

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| **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